A TREATISE

ON

VETERINARY MEDICINE,

IN FOUR VOLUMES.

VOL. II.

CONTAINING THE

MATERIA MEDICA,

AND

PHARMACOPŒIA.

BY JAMES WHITE,

Late Veterinary Surgeon of the First or Royal Dragoons.

VENIENTI OCCURRITE MORBO.

A NEW EDITION;

VERY CONSIDERABLY ENLARGED AND IMPROVED.

LONDON:

PRINTED FOR LONGMAN, HURST, REES, ORME, AND BROWN;
BALDWIN, CRADOCK, AND JOY; SHERWOOD, NEELY, AND
JONES; T. TEGG; AND SIMPKIN AND MARSHALL.

1820.

C. Baldwin, Printer,
New Bridge-Street, London.

TO

EDWARD WHITE, Esq.

THIS VOLUME

IS DEDICATED BY

HIS AFFECTIONATE BROTHER,

THE AUTHOR.

PREFACE.

IT has been the opinion of almost every veterinary author that many, if not the greater part, of the diseases of horses, are occasioned by improper management; and the truth of the observation is admitted, I believe, by every experienced person who has read and reflected upon the subject. For, notwithstanding the attempts that have been made by those who have written on veterinary medicine to improve the general treatment of horses, the same improper management is still general, and seems particularly to prevail among those persons to whom the preservation of the horse's health is an object of the greatest importance. The truth of this assertion may easily be determined by examining the stables in which post-horses and others of a similar description are commonly kept; and, by inquiring into their manner of feeding, watering, working, &c. not only will the truth of this statement then be seen, but it will also be found that there is scarcely one horse in ten among them that is not unsound. If young horses were brought to their work gradually, and not employed in any severe labour until their muscles and other parts had acquired their full power, the duration of their services would perhaps average ten or twelve years, but at present it does not I believe exceed half that period. It may be supposed that the improvements which have been suggested were very expensive, or such as had been found impracticable; but this is not the case. The expence of bruising oats, for example, would be amply repaid by the additional nutriment they would afford, the greater ease with which they would be digested, and the consequent improvement in the animal's health and strength. This is a consideration of more importance than horse proprietors are aware of. The disease termed fret or gripes almost always depends upon indigestion; and is very commonly produced by swallowing corn greedily without sufficient mastication; for it has been shown by Mr. Peall, that when oats pass into the stomach unbroken they are absolutely indigestible, are voided unchanged, and afford considerable nourishment to poultry and birds. When much corn is swallowed in this way, and the horse is suffered to drink freely, they swell considerably, the digestive process is performed with difficulty, and considerable time is required for the stomach to get rid of its load. While the stomach is in this state the animal is often put to work; and if a severe illness is not the immediate consequence, a repetition or continuance of such a practice gradually weakens this important organ, and parts connected with it, and thereby lays a foundation for many diseases. With some proprietors the quality of the oats, but more especially the hay, is a matter of indifference, provided it can be purchased at a low price. This, however, is an error of considerable magnitude, and I have known it productive of the most serious evils. With some it is a practice to give horses water immediately after it has been drawn from a deep well, both in summer and winter. In winter such water is preferable, I believe; but in summer, and especially when a horse is hot and fatigued, it often does much injury, being then considerably colder than the water of ponds or rivers. By such errors, and others, which in the following pages are only occasionally and briefly noticed, added to the injurious practice of working horses when too young and unseasoned, or in a manner not proportioned to their natural strength or suited to their condition, many diseases are produced, the treatment and prevention of which are more particularly considered in the first and third volumes. This volume consists of a MATERIA MEDICA, that is, a description of the various articles or drugs employed in medicine, especially such as are used in veterinary practice, and a PHARMACOPŒIA, or directions for compounding or mixing them, with occasional observations on the diseases for which they are usually prescribed.

In former editions the Pharmacopœia and Materia Medica formed two distinct parts; in the present they are incorporated; that is, the medicinal article or drug, the class to which it belongs, and the formulæ or receipts, are arranged in the same alphabet. This plan appeared to the author more convenient for the reader than that originally adopted. Other alterations, and some additions, will likewise be met with in this edition, which it has been the author's earnest desire to improve. The book he hopes will be approved of, and found useful. Some readers will perhaps object to the number and variety of the formulæ, as well as to the number of ingredients which some of them contain; but however desirable simplicity may be in medicinal composition, there is, perhaps, a limit which it would be dangerous to pass. On this subject Dr. Paris, in his Pharmacologia, makes the following remark. "I have already observed that all extravagant systems tend, in the course of time, to introduce practices of an opposite kind; this truth finds a powerful illustration in the history of medicinal combination; and it becomes a serious question, whether the disgust so justly excited by the *polypharmacy* of our predecessors may not have induced the physician of the present day to carry his ideas of simplicity too far, so as to neglect and lose the advantages, which, in many cases, beyond all doubt, may be obtained by scientific combination." "I think," says Dr. Powel, "it may be asserted, without fear of contradiction, that no medicine compounded of five or six simple articles has hitherto had its powers examined in a rational manner." Dr. Fordyce first demonstrated the existence of the singular and important law, that *a combination* of similar remedies will produce a more certain, speedy, and considerable effect, than an equivalent dose of any single one; thus cathartics not only acquire a very great increase of power by combination with each other; but they are at the same time rendered less irritating in their operation. The same observation is applied to other classes of medicines, especially to diuretics, alteratives, cordials, and tonics. The sanction of such authorities is sufficient, it is hoped, to obviate any objections that may be made to the complexity of some of the formulæ; and though the structure of the human stomach and parts connected with it is so different from those of the horse, as to render all analogical reasoning as to the effect of medicine uncertain, yet we have been too precipitate, perhaps, in dismissing it almost entirely from our consideration. There are several medicines, such as sugar of lead, white vitriol, &c. which produce scarcely any effect on the horse, though powerful agents in the human body; yet it is not very improbable that such medicines, when given daily for some time in small doses, may produce a salutary effect, or even prove deleterious when largely or incautiously so employed. Arsenic has been given to a horse in a dose of 2 drachms twice a day, for several days, without any considerable effect being produced; but in one case a sixth part of that quantity occasioned a fatal inflammation of the stomach and bowels. When the stomach of a horse is in a healthy state, it will bear an astonishing quantity of medicines, which in the human stomach are either poisonous or powerful medicinal agents; but in some *diseased states* of the horse's stomach, which are not unfrequent, the same medicines, or others commonly deemed innocent, will produce a powerful and even fatal effect. Mr. James Clark relates two cases of this kind. One of the horses died from taking a pint of vinegar, and the other by a drench in which there was one ounce of nitre and half an ounce of spirit of hartshorn. The experiments that have been made with a view to ascertain the effect of medicine upon the horse should not be too confidently depended upon, as they have generally been made on glandered horses, or such as were incurably lame; in which case it may fairly be presumed that the stomach was in a healthy state. The experiments that have been made to ascertain the effect of tobacco on the horse, afford a striking proof of the propriety of attending to this circumstance. At the Veterinary College an immense dose (it has been stated three pounds, in infusion,) has been given without any perceptible effect; at Exeter a much smaller quantity, not exceeding, I believe, 2 or 3 ounces, was infused in a quart of beer during the night, and in the morning given to a horse at one dose; immediately after taking it the animal fell down and died.

From considerations of this kind, the Author has been led to believe, that simplicity of prescription in veterinary as well as human medicine, may be carried too far; and that many useful medicines, and combinations of medicines, or *receipts*, may be improperly dismissed from the Veterinary Materia Medica and Pharmacopœia, were we to confide too much in the experiments that have been made on the healthy stomach, or attempt to form general rules or deductions from one, two, or three experiments, however *carefully* they may have been conducted. There is only one source from which any precise or really useful knowledge of this interesting subject can be derived; that is, *a careful and impartial observation, and an accurate recollection of the symptoms of diseases, and the effects of such medicines, whether simple or compound, as are employed for their removal.* With respect to the names of the simple and compound medicines, the Author has employed those of the last London Dispensatory, by Thomson, 1820; but he has given also the older and more common names, and in such a manner as may make the general reader, or the young veterinarian, familiar with both: for our medical nomenclature, even when founded on chemistry or botany, will probably be variable and uncertain. Already has oxymuriate of mercury become a bichloride, in consequence of Sir H. Davy's discoveries, and we know not what other changes may soon take place: therefore, the name *calomel* is perhaps better than *submuriate of mercury;* cantharis, or Spanish fly, than lytta; and gum arabic, than acacia, &c. To the critical and professional reader, some explanation may be necessary, to account for the repetitions that may be met with, the notice of articles not hitherto employed in veterinary medicine, and perhaps some appearance of inconsistency, such as prescribing *jalap* in the *compound cathartic receipts;* and, when noticing it as an article of the Materia Medica, asserting that it is useless as a cathartic, and ought to be dismissed from our Materia Medica.

This was the Author's opinion until lately, and that opinion may still be correct; but upon reflecting on Dr. Fordyce's opinion of the effect of medicinal combinations, and considering that jalap was generally prescribed, not only by the older English writers on Farriery, Bracken, Gibson, &c. but by French veterinarians of the present time, and having been informed that by adding jalap to Cape aloes, they were greatly improved, and rendered more certain in their effect, he was led to introduce the prescription, adding to it a small proportion of calomel. In one experiment, 2 drachms of Barbadoes aloes with ¼ ounce of jalap, proved moderately laxative. Cream of tartar was also an ingredient in the old cathartic prescriptions, and if triturated with the aloes, may modify and improve their action on the bowels, in some particular occasions, though not possessing any purgative power in the horse. This, however, can only be desirable in some particular circumstances, however useful it may have been found, as a more general ingredient in cathartics for the human body, for it cannot be employed with alkalies or soap. And experience has proved these to be the most useful addition that can be made to aloes as a horse medicine. In inflammation of the kidneys, for example, alkalies and soap, on account of their diuretic quality, would be improper; but cream of tartar may be found an useful addition to aloes, should a cathartic be found necessary. Cathartics are by far the most useful and important medicines in the Veterinary Materia Medica.

The public certainly is not sufficiently aware of the importance of the stomach in the animal economy, and how essentially necessary a healthy state of that organ is to the health, strength, and general condition of the horse. To preserve it in this state, and restore it when lost or impaired, should be a principal object, both with practitioners and proprietors; especially the latter, as they may thereby *prevent* a great part of the diseases by which they now sustain so much inconvenience, and suffer such serious losses. For a further view of this *important* subject, see vol. i. 13th Edition, Articles, Stable, Grooming, Worms, Cough, Broken Wind, &c. With regard to the number of the formulæ, and the notice of articles not hitherto employed in veterinary practice, the Author hopes that some good may result from their insertion, and the observations by which they are accompanied; and that one good quality of his book, its moderate size and price, will not be materially altered by it. The important object, the PREVENTION OF DISEASE, the Author has earnestly endeavoured to recommend to the attention of horse proprietors, especially those whose business materially depends on the labour of this valuable and ill treated animal, whenever an opportunity has offered; and he now once more seriously assures them, that to accomplish this desirable object, it is essentially requisite to afford them those comforts and indulgences, which, as sentient beings, they are entitled to; not inflicting upon them unnecessary pain; or working them in an immoderate and unreasonable degree, but treating them in every respect with kindness and humanity. In doing this, they will certainly promote their own interest as horse owners, and, in the Author's opinion, they will, at the same time, fulfil an important duty which every man owes to the brute creation.

VETERINARY
MATERIA MEDICA,
AND
PHARMACOPŒIA.

ABLUENTS. Medicines that were supposed to purify the blood, by carrying off any noxious matter that may be mixed with it.

It has been proved that noxious matter does sometimes exist in the blood; but we do not know any medicine that has the power of *washing it away*, or expelling it, as the term *abluent* implies, unless it be water.

ABSORBENTS. Medicines are so termed that correct any *acidity* that may exist in the stomach or bowels, by combining with the *acid*, and forming an inoffensive substance; in this view they are said to absorb it. *Chalk, prepared oyster-shells, magnesia,* and the *alkalies*, are of this kind.

Horses are sometimes disposed to eat their litter in preference to good hay, and not unfrequently they have a propensity to swallow earth, or any kind of rubbish. This is supposed to arise from the irritation of an *acid* in the stomach; and medicines of the *absorbent* kind are recommended for its removal; particularly *chalk*, mixed, with chaff, cut hay, or with their usual feed. It is probable, however, that the formation of *acid* in the stomach depends upon debility, or some diseased condition of that organ. *Absorbents*, therefore, seldom prove effectual, unless preceded by a dose of warm purging medicine; and then they should be given in conjunction with an aromatic, such as *cassia*, *ginger*, *cascarilla*, &c. When horses are in camp or at grass, they sometimes swallow so much earth, that it forms large balls in the intestines resembling stones, which have in time occasioned death. Hence we may learn how necessary it is to purge horses when taken from camp or grass; which will probably remove any of this earthy matter that may have collected in the bowels. Horses that work in stone-mills are more liable to this complaint than others: in the greater part of the cases that have been published, the horses had worked for some time in a mill, or were the property of a miller:

horses in such situations should therefore have a mild purgative given them now and then, which would probably prevent the formation of those stones. If the disease; for which absorbents are given, continue, it may be necessary to repeat the purgative, and give some tonic medicine after its operation. Absorbents may be given also joined with a purgative, an aromatic, and a tonic, as in the formula or receipt, No. 3.

No. 1.	Subcarbonate of soda	2 dr.
	Columbo root	from 3 to 4 dr.
	Ginger	1 dr.

Mix for one dose.

No. 2.	Prepared chalk	4 dr.
	Gentian root	from 2 to 3 dr.
	Aromatic powder	1 to 2 dr.

Mix for one dose.

No. 3.	Aloes	from 2 to 3 dr.
	Rhubarb	—— 3 to 4 dr.
	Subcarbonate of soda	2 dr.
	Ginger	—— 1 to 2 dr.

Mix for one dose.

The above receipts or medicines may be made into balls, should that form be preferred, with syrup or treacle, and one of them given daily, or every morning and evening, for one, two, or three days, as there may be occasion. No. 3, which contains aloes, may be expected to open the bowels, and, if this effect is produced, it should not be repeated the following morning or day. Other medicines have been used as absorbents, such as magnesia, prepared oyster-shells, crabs' claws, ammonia, &c.; but these are inconvenient or unnecessary in veterinary practice.

ACACIA. See Catechu and Gum.

ACETATE. A neutral salt formed by the combination of acetic acid, with an alkali, an earth, or a metallic oxide.

Acetate of Ammonia. A neutral salt composed of ammonia or volatile alkali, and acetic acid or vinegar. It was formerly named Mindererus's spirit, and much used in medicine as a diaphoretic. It has been prescribed also in veterinary practice; in fever the dose is from four to eight ounces: it is a deliquescent salt, and always kept in solution; and is readily made by adding carbonate of ammonia to distilled vinegar until it is neutralized.

Acetate of Copper. See Verdigris, Egyptiacum, and Copper.

Acetate of Lead. There are two preparations of this kind used in medicine; the one named *super-acetate of lead*, commonly sugar of lead; and the other, *solution of sub-acetate of lead*, commonly Goulard's extract of lead.

A solution of sugar of lead is employed externally as a lotion for inflamed tumours or irritable sores. It is also mixed with hog's lard to form a cooling or weak astringent ointment. It has been prescribed for internal use as an astringent; but is seldom employed in veterinary practice. In experiments on glandered horses, large doses have been given without producing any sensible effect, such as 2 oz. I have heard of 4 oz.; and according to Boardman, even 8 oz. have been given without any perceptible effect. It is not likely therefore to be of much use internally, but as an external application it certainly is valuable. Goulard's extract, as it is commonly called, has nearly the same medicinal qualities as sugar of lead; and when the latter is dissolved to saturation in vinegar, it is, in a medical view, nearly the same as Goulard, or solution of sub-acetate of lead. They both form an useful collyrium or lotion for inflamed eyes; but in this case require considerable dilution. (See Collyrium.) In severe strains, attended with much swelling, they are also employed with advantage; also in inflamed swellings from saddle or harness galls, for such purposes the following lotions may be used.

SATURNINE LOTION.

No. 1.	Super-acetate of lead	1 oz.
	Vinegar	8 oz.
	Water	1¼ pint

Mix.

No. 2.	Solution of sub-acetate of lead, or Goulard's extract	1½ oz.
	Vinegar	6 oz.
	Water	1 pint 10 oz.

Mix.

Sugar of lead has been prescribed for internal use in cattle, but is probably of as little use as in horses. Should any one be inclined to give it a trial, I would, notwithstanding its apparent inactivity, advise small doses to be given at first, as it is known to be poisonous in the human body in small quantity. (See Ointments, Liniments, Collyrium; and vol. i. 12th Edition.)

ACETATE OF POTASH. A neutral salt formerly named *diuretic salt* (sal diureticus), probably very inferior to nitre; and much less convenient, from its property of becoming liquid by exposure to the atmosphere.

ACETATE OF ZINC. A metallic salt formed by the oxide of zinc and the acetic acid. It is readily made by dissolving 2¼ drams of sugar of lead (acetate of lead), and 2 drams of white vitriol (sulphate of zinc), in a pint of water, and filtering the solution through blotting paper. This liquid consists of a solution of acetate of zinc, and forms an useful lotion for inflamed eyes, or for inflamed tumours; in the former case it sometimes requires to be diluted, and may occasionally be made stronger or improved by the addition of a small proportion of tincture of opium.

ACETIC ACID. Vinegar, concentrated, distilled or purified. (See Acids.)

ACETOUS ACID. This name also is applied to distilled vinegar as well as the preceding, and is noticed under the head Acids; in addition to which it may be observed, that it has often been employed with advantage as a fomentation in strains and bruises, and has been recommended in a diluted state as an eye lotion.

ACIDS. This term is applied to medicines that have a sour taste. *Acids* are also distinguished by their changing an infusion of blue violets or litmus to a red colour, and combining readily with *alkalies* and *earths*. Many of them also combine with or dissolve metallic substances, forming with them useful compositions; such as *blue vitriol*, *lunar caustic*, *red precipitate*, &c.

Chemists divide *acids* into three classes; viz. mineral, vegetable, and animal; and describe many different kinds under each class: but we shall confine our attention to such as may be employed, with advantage, in Veterinary Medicine and Surgery.

Sulphuric Acid, Vitriolic Acid, or *Oil of Vitriol.* This acid was formerly prepared from *green vitriol* or *copperas* (vitriolated iron), or from the *pyrites* or fire-stone. It is now, however, obtained from sulphur, by burning it with nitre, in a close vessel containing a small quantity of water, which is afterwards separated from it by evaporation. *Sulphuric acid* is a powerful caustic, and generally requires to be diluted with water before it is used; but when it is wanted to destroy excrescences, particularly those which arise in *canker* of the foot, it may be used alone with advantage. One ounce of the *acid* to a pint of water forms an useful lotion for obstinate cases of *grease;* if made a little stronger, it is a good application for foul ulcers. *Sulphuric acid* is sometimes mixed with *oil of turpentine* and *hog's lard* as a detergent ointment for ulcerated heels, or for dispersing indurated tumours; and this, when mixed with a proper proportion of *Spanish flies*, forms an active *blister.* (See Blisters and Detergents.)

It is probable that *sulphuric acid* might be given internally as a *tonic* with good effect; but for this purpose it requires so much dilution, that it could not be given to a horse, in sufficient quantity, without great inconvenience.

For *internal use* sulphuric acid is sometimes mixed with alcohol or spirits of wine, and in this mixture are infused spices, such as cinnamon, ginger, &c. This was formerly named elixir of vitriol; and in the new dispensatories aromatic sulphuric acid. I once saw much mischief done by giving sulphuric acid not sufficiently diluted. It is ordered in the dispensatories in this form; that is, mixed or diluted with water in the proportion of one and a half ounces of the acid to fourteen of water, both by measure; this is sold in the shops sometimes under the name of spirit of vitriol, but it is far too strong for internal use; a few drops of the sulphuric acid being sufficient for half a pint of water. In mixing sulphuric acid with a small proportion of water considerable heat is produced, even to boiling, by which glass vessels in which the mixture is made may be cracked; caution is necessary therefore in diluting it.

Sulphuric acid, when combined with alcohol and distilled, forms that volatile and powerful medicinal preparation named sulphuric ether; with soda it forms sulphate of soda or glauber's salts; with magnesia epsom salts, or sulphate of magnesia; with iron green vitriol, or copperas;

with copper blue vitriol; with zinc white vitriol. (See Sulphates, Vitriol, Copper, Zinc, and Iron.)

NITROUS ACID, or *Strong Spirit of Nitre.* This, like the preceding, is used only as an external application in veterinary practice; though it might probably be employed internally with good effect, were it not for the same inconvenience that attends the exhibition of the vitriolic acid.

Nitrous acid, in its concentrated or strongest state, is a powerful caustic; and when mixed with water, or unctuous substances, it forms many efficacious lotions and ointments for various external complaints. Almost every metal may be dissolved in this acid, with many of which it forms very useful caustics and escharotics; with silver it makes lunar caustic (*nitrate of silver*); and with quicksilver, red precipitate (*nitric oxide of quicksilver*). (See Caustics, Escharotics, and Detergents.)

That useful medicine termed nitre is composed of this acid and the vegetable alkali or potash. The metallic combinations of nitrous acid may be employed either in a liquid or solid state; they may also be diluted with water, or mixed with unctuous substances, to form detergent ointments of any degree of strength that may be required.

Strong or concentrated nitrous acid is of a deep yellow colour, approaching to orange, and emits suffocating fumes of the same colour. When water is added, the yellow colour is destroyed, and it ceases to emit fumes: the same effect may be produced merely by application of heat; in this state it is termed *nitric acid*.

Aqua-fortis is made by mixing nitrous acid with about an equal quantity of water.

Muriatic Acid, or *Spirit of Salt*. This acid is obtained by distilling common salt with *sulphuric acid*.

Muriatic Acid is generally of a light yellow colour, and when exposed to the air emits white suffocating fumes. This acid is sometimes used as a caustic, to destroy excrescences or fungous flesh, or to cleanse foul ulcers; and being considerably weaker than the two former, may be applied in its concentrated state without inconvenience.

Muriatic Acid is a component part of several useful preparations, among which are calomel, sublimate (*muriate of quicksilver*), and crude sal ammoniac (*muriate of ammonia*). When *muriatic acid* is distilled with a mineral termed *manganese*, it acquires new properties: it becomes capable of destroying the colour of vegetable substances, and is therefore employed chiefly in the process of bleaching; in this state it is termed *oxygenated muriatic acid*. If glanderous matter be exposed to the *fumes* of acid, its contagious quality is destroyed.

ACETOUS ACID, or *Distilled Vinegar.* This well-known acid is commonly employed as an embrocation for *strains* and *bruises;* but it proves much more efficacious in those complaints if mixed with *sal ammoniac* (*muriate of ammonia*), and a small proportion of *spirit of wine.* An useful lotion is also made, by mixing with *vinegar* a small quantity of *Goulard* or *sugar of lead,* and then diluting it with water according to the nature of the case for which it is employed. *Goulard's extract,* or extract of saturn (*acetated water of litharge*), is made by mixing litharge with vinegar, and simmering the mixture for a considerable time over a slow fire. From the same materials, and varying the process a little, *sugar of lead* is prepared (*acetated lead*).*

For all veterinary purposes, common vinegar is equal, if not superior, to that which is distilled; diluted vinegar has been recommended as an eye lotion.

TARTARIC ACID, or *Acid of Tartar.* *Cream of tartar* consists principally of this acid, having a small proportion of vegetable alkali, or potash, combined with it.

Though *cream of tartar* has been found useful in human medicine, it has no perceptible effect upon the horse, and I believe is very seldom used by experienced veterinarians. Writers on farriery have recommended cream of tartar as a necessary ingredient in purgative medicine, to correct a dangerous acrimony supposed to reside in *aloes:* this opinion, however, is unfounded. Aloes, if not given too largely, is an innocent purgative; and were it otherwise, cream of tartar has not the power of correcting acrimony. It has been recommended also in febrile complaints, mixed with infusion of senna, lenitive electuary, &c. as a cooling drink. But according to my experience *cream of tartar*, as well as *lenitive electuary* and *senna*, are absolutely useless in veterinary medicine.

---

* Sugar of lead is prepared from the *subcarbonate of lead,* commonly called *white lead,* and vinegar.

Cream of tartar is found in an impure state, adhering to the sides and bottoms of vessels in which wine has been kept.

ACONITE. A vegetable substance poisonous to horses and cattle; it has, however, been employed in medicine, and has been given to horses by way of experiment, both in this country, and by some practitioners on the continent; but it does not appear likely to be of service in any disease to which horses or animals are liable. (See Nux Vomica.)

ACOPUM. A stimulating composition used both internally and externally by the ancients. It contained about thirty ingredients, some of them powerful stimulants, such as euphorbium and pepper.

ACTUAL CAUTERY. The red hot iron. (See Firing.)

ÆGYPTIACUM. See Egyptiacum.

ÆRUGO. See Verdigris.

ÆTHER. See Ether.

ÆTHIOPS. See Ethiops.

AGARIC. A fungus found in the decayed trunks of the ash and the oak. It was formerly used as a styptic, but modern practitioners place no confidence in it.

AIR. As the health of horses materially depends upon the salubrity of the air in which they are kept, it is probable that many of their diseases arise from the little attention that is paid to the ventilation of stables. It is said that even the *glanders*, a fatal and contagious disease, has been generated by confining horses in an impure air. It is a common practice with grooms, particularly those who fancy themselves profoundly skilled in the art of farriery, to stop every crevice they can find in the stable, so that pure air is with difficulty admitted; and the noxious vapours arising from the litter, from perspiration and respiration, are in great measure confined. Horses thus situated must necessarily suffer in a greater or less degree; and though the air may not be so contaminated as to occasion fatal diseases, it is sufficiently so to debilitate the constitution, and thereby lay a foundation for numerous complaints, as well as to create local diseases, such as inflamed eyes, obstinate coughs, and perhaps *moonblindness*, as it is termed. Horses that have weak eyes and lungs are sure to be injured by this treatment. Another inconvenience arising from it, is that of rendering a horse very susceptible of cold. *Ventilation* is, therefore, an object of great importance in the construction of stables; and is most conveniently done by making proper apertures in the ceiling, communicating with the external air; and by means of windows, adapted to the form and size of the stable. It is a bad method of ventilation to leave the upper part of the racks open, so as to communicate with the roof of the building, as a current of air is thereby produced in a stall, from the ready ascent of the light air, over the horse's head. The litter should not be suffered to remain in the stall during the day, but be removed to some open place and well shaken, that the ammoniacal vapours it affords may be thoroughly dissipated. Should it be necessary for a horse to lie down in the day-time, he should be allowed fresh straw. (See vol. i.)

ALCOHOL, or RECTIFIED SPIRIT OF WINE. This is obtained by the distillation of fermented liquors, in a diluted state; it is afterwards rectified or concentrated by a second or third distillation more gradually conducted, and with less heat. Alcohol is extensively employed in medicine, chiefly in making tinctures; with an equal quantity of water it forms proof spirit, the most usual form in which it is employed.

ALKALIES. *Alkalies* form one of the classes of saline bodies, and are of three kinds: 1st, The *vegetable alkali*, kali or potash. 2d, The *mineral alkali*, soda or natron: and the *volatile alkali*, or ammonia. Each of these will be described under the following heads, *potash*, *soda*, and *ammonia*: which names are employed by the London College of Physicians. *Alkalies* are distinguished by their changing blue vegetable colours to a green, and yellow to orange; by combining rapidly with acids, and forming with them neutral salts (see Acids); and by rendering oils miscible with water (see Emulsions and Soap). The *vegetable* and *mineral alkalies*, from not being evaporable, except in a high degree of heat, were termed *fixed*: and *ammonia*, being evaporable in a low temperature, obtained the name of *volatile alkali*.

ALKANET ROOT. The only use of this root, is to give an elegant red colour to oils and ointments.

ALLSPICE. Jamaica pepper, a powerful cordial and carminative; the dose from two to three or four drams. Mr. Bracy Clarke, in a book he has published on flatulent or spasmodic colic, or gripes, strongly recommends a tincture of allspice in proof spirit, as an effectual or sovereign remedy for that disorder. The dose about half a pint in water.

ALOES. This is the inspissated juice of certain plants of the same name, and the most effectual purgative for horses we are acquainted with. It is of an intensely bitter taste, and of a strong unpleasant odour.

The different sorts of aloes are distinguished by the names of the places whence they are brought.

SOCOTRINE ALOES is brought from the island Socotra, in the Indian ocean, and is supposed to be more safe in its operation than the other kinds. It is of a dark reddish or brown colour, quite opaque, and has a less disagreeable smell than the others; it sells at a high price, and is therefore not unfrequently adulterated. I have been so often disappointed in the effect of *socotrine aloes*, or rather what is commonly sold under that name, that I now always use the *Barbadoes*, which cannot be so easily adulterated without detection.*

BARBADOES ALOES is brought from Barbadoes, and has been generally considered as a rough medicine, very liable to produce griping, and other unpleasant effects; but I have always found it a safe and efficacious purgative. *Barbadoes aloes* is of a darker colour than the former kind, less brittle, and of a stronger and more disagreeable smell. It is certainly more active than the socotrine; and, as far as my experience goes, more certain in its operation: nor have I ever found it produce those dangerous effects that have been attributed to it, when given in a proper dose, and when the horse is not neglected during its operation and properly prepared for it; (see Cathartics): indeed, every kind of aloes is liable to produce even fatal consequences if given too largely, or if the horse be treated improperly while under their effect. There is a peculiarity in the horse's intestines which renders them more liable to be injured by purgatives of every kind, than those of any other domestic animal: cathartic medicines should therefore be always prepared by persons of judgment and experience.

---

* At this time (December 14, 1805) *Socotrine Aloes* are at about the same price or cheaper than *Barbadoes*.

Cape Aloes is rather transparent, and very brittle: it is easily powdered, in which state it is of a bright yellow colour; the odour arising from it is not so strong as the *Barbadoes*, but rather stronger and less agreeable than the socotrine. This kind is sold at a much lower price than the others, but is so weak and uncertain in its effect, that it is seldom employed in veterinary medicine. The dose of *socotrine aloes* is from five drams to nine; *Barbadoes*, from four drams to six; and of the *Cape*, from six to ten drams.

Aloes generally operates more speedily when joined with *soap* or either of the *fixed alkalies*. (See Alkalies.) In the old books on farriery, cream of tartar is generally prescribed with aloes, under a supposition that it prevented griping; but I consider it by no means proper, and have for some time preferred soap and the alkalies, such as potash and soda; but soap is by far the most convenient. (See Cathartics.)

Aloes is sometimes given as an alterative in the dose of one or two drams. It is also an ingredient in *Fryar's balsam*, and *compound tincture of myrrh*; preparations often used by farriers. (See Vulneraries, Alteratives.)

ALTERATIVES are medicines that act very gradually upon the constitution, and therefore require to be continued for some time. The medicines most commonly used as alteratives in farriery are antimony, nitre, sulphur, and resin; these are generally given together, particularly the three former.

It is commonly supposed that the good effects of *alteratives* arise from certain changes they produce in the blood: it is more probable, however, that they act only on the solids; and though their action is scarcely perceptible, they will be found upon a careful examination to produce some sensible effect, either upon the bowels, the kidneys, or the skin; increasing the action of those parts, and causing them to secrete their respective juices or fluids more copiously, thereby removing from the blood such parts as are injurious or superfluous. From this view of the subject it appears necessary to divide *alteratives* into three classes, viz. *laxatives, diuretics,* and *diaphoretics.*

LAXATIVE ALTERATIVES are useful in many cases, and may often be substituted for *purgatives* with great advantage.

When a horse is troubled with worms, and is too weak to take strong medicines, or when he cannot be spared from his work, they are extremely convenient, and generally beneficial. In obstinate cases of *grease,* and in chronic inflammation of the eyes, they often do good; they are generally serviceable also in coughs of long standing, or even when they are recent, if not caused by strangles, in which disease the throat is often so much inflamed, and so very sore, as to render the exhibition of medicine by the mouth improper. Clysters, however, are often beneficial in those cases.

In short, there are few medicines of more general utility in the diseases of horses, than the laxative alteratives, the most effectual of which is *aloes*, in the dose of two or three drams, with an equal quantity, or rather more, of Castile soap.

When it is employed to destroy worms, from ten to twenty grains of *calomel* may be added.

Diuretic Alteratives are composed of *nitre*, *resin*, *soap*, and *turpentine*. Diuretic alteratives are employed in swellings of the legs and other parts, or as a preventive, in horses that are subject to such swellings. They are given also to improve the coat and general condition of the animal.

Though not so effectual in many cases as the preceding, they are certainly very convenient and innocent, and produce so little disturbance in the body, that a horse may continue his work while taking them, without the least danger, even in the winter season. Nor is there any trouble in giving them; as a horse readily eats them, when in the form of a powder, with his corn. The *laxative alterative* has not this advantage; the aloes, of which it is composed, being extremely bitter, and therefore requires to be given in the form of a *ball*.

Diaphoretic Alteratives are composed of medicines that act on the skin, gradually increasing the insensible perspiration, and giving a smoothness and gloss to the coat. The most effectual medicines of this class, are the preparations of *antimony* (see Antimony); but these may be rendered more efficacious by being joined with other medicines.

The complaints in which this kind of *alterative* is most useful, are those termed *surfeit* and *hide-bound;* they are also employed to remove an undue determination of blood to any internal organ, or to diminish general plethora.

The complaints in which this kind of *alterative* is most useful, are those termed *surfeit* and *hide-bound;* they are also employed to remove an undue determination of blood to any internal organ, or to diminish general plethora.

Diaphoretic alteratives seldom prove effectual, unless assisted by exercise and good grooming. (See *Dressing*; also vol. i.)

The alteratives recommended by writers on farriery are not composed according to the distinction we have here made; but laxatives, diuretics, &c. are mixed with little discrimination: thus, as we have before observed, antimony, nitre, sulphur, and resin, form their general alterative; and when it was required to remove diseases, supposed to arise from obstruction in the blood-vessels, some ponderous medicines were prescribed: among these were cinnabar, and Æthiop's mineral. This mechanical mode of removing obstructions, however, is now totally disregarded, being incompatible with our present knowledge of physiology.

ALTERATIVES.

Laxative.

No. 1. Barbadoes aloes .... 10 to 12 dr.
Castile soap .... 1½ oz.
Anise seed, powdered 1½ oz. or 2 oz.
Ginger .... ½oz.

Syrup or treacle enough to form a mass, to be divided into four balls, one of which is to be given daily until the bowels are opened.

No. 2. Barbadoes aloes .. from 10 to 12 dr.
Calomel .... —— 2 to 4 dr.
Caraway seed, powdered .... 1½ oz.
Ginger .... 4 dr.
Oil of cloves ....40 drops.

Mix as above for four doses, and give one daily until the bowels are opened. While taking these balls the horse must have mashes, and the chill taken off his water: he should not be exposed to the cold, but have moderate exercise.

No. 3. Sublimed sulphur .... 6 oz.
Tartarized antimony .. 6 dr. to 1 oz.
Calomel .... 3 dr.

Mix and divide into six doses, one of which is to be given daily. In obstinate cases of mange or other diseases of the skin, corrosive sublimate in a dose of ten grains may in very bad cases be substituted for the calomel: the form of a ball is then the best.*

Diuretic Alteratives.

No. 1.	Yellow rosin, and nitrate of potash, of each	4 oz.

Mix and divide into six or eight parts, one of which is to be given daily in the horse's corn, until a diuretic effect is produced.

No. 2.	Yellow rosin	4 oz.
	Spanish soap	3 oz.
	Venice turpentine	2 oz.

Powdered caraways enough to form the mass. To be divided into balls of a moderate size, one to be given daily until a diuretic effect is produced.

No. 3.	Powdered nitre	4 oz.
	Rosin and flour, of each	2 oz.
	Oil of juniper	¼ oz.

Treacle enough to form the mass. To be divided into balls of a moderate size, and given as above.

---

* According to Dr. Paris, in his Pharmacologia, sublimate is decomposed by tartarized antimony: this decomposition, however, may not take place in the stomach: and as the medicine is given in the form of ball, and has been found efficacious, it is a consideration of no importance.

DIAPHORETIC ALTERATIVES.

No. 1.	Levigated sulphuret of antimony	1 oz.
	Caraway seeds	½ oz.

Mix for one dose.

No. 2.	Precipitated sulphuret of antimony	½ dr.
	Antimonial powder	2 dr.
	Powdered caraways	½ oz.

Mix for one dose.

No. 3.	Antimonial powder	2 dr.
	Camphor	1½ dr.
	Flour	3 dr.

Syrup enough to form the ball for one dose.

No. 4.	Tartarized antimony	1 to 2 dr.
	Camphor	1 to 2 dr.
	Liquorice powder	3 dr.

Syrup enough to form the ball.

Diaphoretic medicines are very uncertain in their effect upon the horse, and unless great care is taken of the animal with respect to grooming, exercise, diet, and clothing, little benefit is to be expected from them. Opium has been prescribed with camphor, tartarized antimony, ammonia, and other stimulants, for the purpose of relaxing the skin and producing perspiration; but there is often danger in giving such medicines, especially when there is any degree of fever present: the medicines prescribed in the above receipts are innocent if they fail in affecting the skin, as in such cases they are generally determined to the kidneys, and cause an increased discharge of urine.—See Diaphoretics, Febrifuges or Fever Ball. Sudorifics, Opium, &c. Many other medicines have been prescribed as alteratives, by veterinary writers, among which are Ethiop's mineral, cinnabar, guaiacum, kermes mineral, cream of tartar, the neutral salts, &c. To these may be added one which has often been found more efficacious than all the rest, that is soiling in the stable on vetches or tares, lucern, &c. or a run at grass. (See vol. i. Stable Management, 12th edition.)*

ALTHEA. (See Marsh-mallows.)

ALUM. A saline body, composed of the *sulphuric acid*, and *alumine*, or pure clay. It is used internally as an *astringent* in *diarrhœa*, *diabetes*, &c. in doses from half an ounce to an ounce, and is generally joined with *bitters* and *aromatic stimulants*, such as *gentian*, *cassia*, *aniseed*, *caraway seed*, &c. For external purposes *alum* is very useful: it is a good remedy for the *grease*, when dissolved and applied to the diseased parts; when burnt, as it is termed, it becomes an excellent remedy for cleansing foul ulcers, for which purpose it is often mixed with sulphate of copper or red precipitate. (See Escharotics.)

---

* The effect of alteratives in cutaneous diseases is sometimes only temporary; this is accounted for when we consider how little attention is paid to the cause of such diseases. If improper feeding be the cause of those disorders, how can any permanent benefit be expected from medicine, unless that error is corrected? Too much even of good hay and oats, especially when the animal is permitted to drink freely, will gradually induce a disordered state of the digestive organs; hence arise a morbid, voracious, or depraved appetite, and a disposition to eat even foul litter. From this cause proceed not only diseases of the skin, but also chronic cough, asthma, or broken wind, roaring, and worms; even the ascarides found in the arteries are thus engendered.

Burnt Alum is made by putting any quantity of alum in an iron ladle, or common fire-pan, and keeping it over a gentle fire, until its watery parts are evaporated, and it is converted into a light and easily pulverable substance. If exposed to a strong heat for some time, the alum is decomposed, and of course useless.

ALKOHOL. See Spirit rectified.

AMBER. This is what naturalists term a *bitumen*. It affords only one preparation that is used in veterinary practice,—an essential oil, of a dark colour, and very disagreeable odour, —which is employed at an embrocation in strains, bruises, &c. generally mixed with other oils, such as *oil of elder*, *turpentine*, &c. It is given internally as an antispasmodic, in doses from two drams to half an ounce. For medicinal purposes this essential oil is rectified, whereby it becomes of a lighter colour, and loses in some degree its unpleasant smell; but it does not appear to be rendered more efficacious. There is a *salt of amber* kept in the shops, procured from *amber* by sublimation, but it is never used in veterinary practice.

AMMONIA. This is the modern term for what was named *volatile alkali*, and is procured either from bones or sal ammoniac. It is kept in the shops, both in a solid and a liquid form. Strictly speaking, *pure ammonia* exists only in the form of *gas*, or air; but water will absorb a considerable quantity of this air; and when saturated with it becomes a violent stimulant, capable of inflaming and even blistering the skin. This is termed *water of, or solution of pure ammonia*, or *strong spirit of sal-ammoniac*, and is useful in dispersing indolent tumours, if mixed with an equal quantity of sweet oil, and oil of turpentine, in which camphor has been dissolved. This is a good application also in swellings of the back sinews or other parts, in consequence of strains or bruises, when free from inflammation. *Water of pure ammonia* is too strong for internal use; but when *ammonia* is by a chemical process combined with *carbonic acid*, or fixed air, it assumes a solid form, and is rendered sufficiently mild for internal use. In this state it is named *carbonate of, or prepared ammonia, volatile sal am-*

moniac, or *smelling salt*, being much used for smelling-bottles, as its quick pungent odour is well calculated to remove faintness.

CARBONATE of AMMONIA is stimulant and cordial, and may be given in doses from half a dram to two drams. It is given in the latter stages of fever, when debility is the leading symptom.

When carbonate of ammonia is dissolved in water to saturation, it forms *water or solution of mild ammonia*, or *common spirit of sal ammoniac*; when distilled with spirit and some aromatic oils, *spirit of sal volatile*, or *compound spirit of ammonia*: and if *assafœtida* be added, the *fœtid spirit of ammonia* is produced, which is an excellent antispasmodic. (See Assafœtida.)

The SALT and SPIRIT of HARTSHORN are nearly the same as the *carbonate*, and the *solution of*, or *water of ammonia*; but being distilled from bones, or stag horns, which are of the same nature; they are slightly impregnated with *animal oil*, which gives them a peculiar smell, and is supposed to increase their antispasmodic power. (See Antispasmodics.)

AMMONIACUM is divided into two sorts. The first is of a yellowish colour, interspersed with small pieces of wood, and other extraneous matter: the other, in small pieces or drops, of a whiter colour than the former, and much more pure; this is commonly called *drop ammoniacum*. The former, however, may be employed for veterinary purposes, making a little allowance in the dose for the extraneous matter it contains; but this may be in a great measure separated by pounding and sifting.

GUM AMMONIACUM is an expectorant, in doses from three to five drams. It is advantageously joined with powdered squills, and in some cases with camphor, balsam of tolu, and opium.

Horses that are of a full habit, should be bled, and take a cathartic ball previous to the exhibition of those expectorants, which generally renders them more efficacious. It may be proper to observe, that *ammoniacum* is never to be employed in recent coughs, arising from *catarrh*, or cold, but only in the *chronic* kind, that are not dependent on inflammation.

AMMONIATED, or AMMONIURET of COPPER. This preparation is made by rubbing together in a mortar sulphate of copper four drams, carbonate of ammonia six drams. When the effervescence which will take place has ceased, wrap it up in some blotting paper, and dry it with a gentle heat. It is considered as a powerful tonic in human medicine, but has not, I believe, been tried in veterinary practice. See Tonics.

ANGELICA. An aromatic plant, too weak for veterinary purposes.

ANGUSTURA BARK. This is said to be a good tonic and stomachic medicine; and is often employed by medical practitioners, in cases where the Peruvian bark does not agree with the patient. It does not appear to be necessary in veterinary practice, and is very rarely used.

The dose is from half an ounce to an ounce or more.

ANISE-SEED, or *Aniseed.* This seed is much used in horse medicine, as a stimulant and cordial; but its power is by no means considerable. It is thought to possess also an expectorant quality, and is therefore given in coughs and other complaints of the lungs, but is generally joined with other expectorants. It is certainly, though weak, a very grateful stimulant, and does much good where the stomach is weak, and disposed to flatulency; it is therefore an useful ingredient in cordial medicines. The dose is about one ounce or rather more. (See Cordials and Carminatives.) The virtues of anise-seed are contained in its essential oil, the dose of which is about half a dram or more: it may be rubbed in a mortar with sugar, mucilage and ginger, and given in warm ale or water.

ANODYNES. Medicines that alleviate or remove pain, the most effectual of which is opium. The other narcotics have also been occasionally employed for this purpose, among which are henbane, deadly nightshade, hemlock, white poppy-heads, &c. In horses, pain often depends on inflammation or obstruction in the bowels or other passages; in such cases anodynes, or rather narcotics are injurious; but when pain depends upon *spasm,* as in the flatulent or spasmodic colic, commonly named gripes or fret, it is an excellent remedy. (See vol. i. article Colic.) In that dangerous spasmodic complaint, named locked-jaw, opium is the medicine that is principally relied on, though it is generally given with others, such as camphor, assafœtida, &c. (See vol. i.; also Antispasmodics, Opium, Henbane, &c.)

ANODYNE BALL.

Opium	from ½ dr. to 1 dr.
Castile soap	2 dr. to 4 dr.
Powdered ginger	1 dr. to 2 dr.
Powdered anise-seeds	½ oz to 1 oz.
Oil of caraways	½ dr.

Syrup enough to form the ball.

ANODYNE DRAUGHT, OR DRENCH.

Tincture of opium	½ oz. to 1 oz.
Spirit of nitrous ether	1 oz. to 2 oz.
Essence of peppermint	from 1 to 2 dr.

Water one pint.

The ball may be mixed with warm ale, if the form of a drench be preferred to that of a ball, and either of the receipts will be found a good remedy for the flatulent or spasmodic colic. In the anodyne draught warm beer may be substituted for water. It should be recollected that when the colic is attended with costiveness, clysters and oily laxatives are necessary, either in addition to the anodyne, or before the anodyne is exhibited. Essence of peppermint consists of the essential oil of peppermint dissolved in spirit of wine: one part of the former to three of the latter. (See Essence and Mint.) Anodynes are sometimes exhibited in the form of clyster, as in locked-jaw, when no medicine can be given by the mouth, which often happens in bad cases; it is then necessary to employ about a double dose, or rather more. (See Locked Jaw, vol. i. 12th edition; see also Clysters, vol. ii.) Anodyne fomentations are prescribed occasionally, which consist chiefly of a decoction of white poppy heads, but the anodyne quality of narcotics when applied externally, is rather doubtful, I believe, and it is not improbable that the warm water employed is the most useful, if not the only useful part of such fomentations. (See Fomentations.)

ANTHELMINTICS. Medicines that destroy worms, or expel them from the intestines. The most effectual are the mercurial purgatives.

A variety of vegetables have been thought to possess this quality, but I believe without foundation; among these are box, rue, savin, and wormwood. Æthiop's mineral, antimony, sulphur, and tin, have also been considered as *anthelmintics:* but I have never known any of them effectual in this way. I believe, however, that tin has not been fairly tried: and as it is an efficacious anthelmintic in dogs, it may probably be found useful in horses.* Of all the mercurial preparations, *calomel* is by far the best for this purpose, and may be given with aloes, soap, and some aromatic oil, with a little ginger. Many prefer giving the calomel at night, and the purgative the following morning. Aloes are a good *anthelmintic.* A saline substance was some time ago introduced from India, as a remedy for that species of worm termed *botts.*† It seems to be composed of common salt and liver of sulphur, but it does not appear to deserve the character that was given of it; though, like salt or brine, it will sometimes cause the common or intestinal worm to be evacuated.

---

* I have lately had an opportunity of trying the efficacy of tin, as a worm medicine. It sometimes destroys them, but not uniformly; and appears to be more effectual when joined with calomel. (See Pewter.)

† We do not know any method by which botts can be detached from the stomach; they sometimes do considerable mischief to that important organ, perhaps much more than modern veterinary writers appear to have been aware of. At a certain period of their existence they undergo a change, like the caterpillar or silk-worm, and pass off with the excrement. (See White's Veterinary Dictionary, or Rees's Cyclopædia, article *Botts.* Also vol. i. 12th Edition, article *Worms.*) In examining worms found in various parts of the body, and reflecting upon the disorders with which they appear to be connected, I have been led to believe that it is a subject of considerable importance, and that a great deal of

It has been supposed, that worms are sometimes generated in consequence of debility in the digestive organs. Tonics have therefore been recommended, particularly the vegetable bitters; such as bark, wormwood, camomile, &c. When worms are discovered in the horse's dung, after a fair trial has been given to mercurial purgatives (especially if he appears to be weak, and incapable of much work), it would be adviseable to give tonic and cordial preparations, with a generous diet: but whenever this is done, there must be proportionate exercise. One plan of treating a horse with worms is to keep him fasting for several hours, and then give a small quantity of milk and sugar, which is to be followed by a dose of the anthelmintic in a liquid form: a solution of common salt has been recommended for this purpose, to which may be added two or three drams of aloes. The dose of salt is about four or six ounces, in three

---

good may be done in the way of *prevention* by means that have not hitherto been sufficiently attended to, and by others that I believe have not yet been made known or published *Ascarides* are found even in the arteries of horses, and that too not seldom; therefore *arsenic*, in small doses, as an alterative, when judiciously administered, may prove a prophylactic. The result of my researches on this subject will be published at some future opportunity.

pints of water. Oil of turpentine has of late been recommended as an anthelmintic, and has, I believe, been found more efficacious than any other medicine. The mode of giving it is to keep the horse without food for several hours before, and then to give four ounces mixed with a pint or more of oatmeal gruel: The day before the horse is to take about three or four drams of aloes, with an equal quantity of soap, in order to open the bowels moderately, and so that they may be in a loose state at the time the turpentine is given. Some caution is necessary in adopting this method, as in two cases that have come to my knowledge, the stomach appeared to have been dangerously affected, and in one it produced a degree of inflammation that proved fatal. In one of the cases the turpentine was given undiluted when the stomach was empty. In the second, the horse was kept fasting too long a time, I believe twelve hours; in the third which proved fatal, the purgative given the day before appeared to have been too strong. I would advise, therefore, when oil of turpentine is given as an anthelmintic, that the horse be prepared with bran mashes, as for physic; that only three drams of aloes, with an equal quantity of Castile soap, be given the day before the turpentine, and that when the latter is given, the stomach should not be in so exhausted a state by fasting as it appears to have been in one, if not all of the above cases. Perhaps a small bran mash may be given, about six or seven in the morning, and the turpentine about eleven or twelve. May it not be worth while to try a mixture of castor oil, or linseed oil, and oil of turpentine, as an anthelmintic? A run at grass, in May or June, has been found a good remedy for worms; soiling in the stable with vetches, or tares, lucern, &c. may also be tried. (See vol. i. article Worms, 12th edition)

ANTHELMINTICS.

No. 1.	Aloes	from 4 to 6 dr.
	Castile soap	3 dr.
	Oil of cloves	10 drops.
	Calomel	from 1 to 2 dr.
	Ginger	—— 1 to 2 dr.
	Syrup enough to form the ball for one dose.	
No. 2.	Aloes	from 4 to 6 dr.
	Powdered tin	—— 3 to 4 dr.
	Castile soap	3 dr.
	Oil of cloves	from 10 to 20 drops.
	Ginger	—— 1 to 2 dr.
	Syrup enough to form the ball.	
No. 3.	Common salt	4 oz.
	Aloes	2 dr.
	Water	1 qu.
No. 4.	Oil of turpentine	4 oz.
	Oatmeal gruel	1 pint.
No. 5.	Oil of turpentine	4 oz.
	Castor or linseed oil	8 oz.
	Gruel	8 oz.

Mix for one dose.

As worms in horses generally arise from bad management and improper food, by which the digestive organs are weakened, no permanent good can be expected from medicine, unless that error be corrected. Wholesome food therefore, in proper quantity, or in proportion to the animal's labour, is essentially necessary, in order to eradicate worms from his bowels, and restore him to a state of health and good working condition.

ANTIMONY. This is a heavy, shining, brittle mineral, somewhat like black lead when powdered, but of a darker colour. It is common in Germany and France. A small quantity is found in Cornwall, but not sufficiently pure for medicinal purposes.

Antimony is composed of a metallic substance termed *regulus of antimony*, and *sulphur*. It is given as an *alterative*, in doses of an ounce or more, to improve the coat and condition of horses: some give it to destroy worms; but it does not appear to possess any power of that kind. A variety of useful preparations is made from antimony, many of which are more efficacious than the mineral itself; among these are *antimonial powder*, which is said to be the same as *James's powder*, *emetic tartar* (tartarized antimony), *golden sulphur of antimony*, *kermes mineral*, *or precipitated sulphuret of antimony*, *oxide of antimony*, *&c.* The most useful preparations are the tartarized antimony, antimonial powder, and the sulphuret, or common antimony, such as is sold under the name of antimony; but this should be finely powdered or levigated. To these may be added the precipitated sulphuret of antimony, though it is seldom employed, except as an alterative. As a fever medicine tartarized antimony and antimonial powder are certainly preferable to every other preparation, and are those most commonly employed. Other preparations are occasionally used by farriers, such as liver of antimony, glass of antimony, antimonial wine, powder of algaroth, &c. There is another fluid preparation which is often employed as a caustic, formerly named *butter of antimony*, but now muriate of antimony. This has been found useful in foul ulcers of the foot or other parts, such as canker, quittor, and farcy buds or ulcers. The dose of tartarized antimony is from one to two or three drams; and, though a powerful emetic in the human stomach, does not appear to excite nausea in the horse; but given largely is more apt to effect the kidneys or bowels. It is considered, by veterinary practitioners, as a safe and effectual fever medicine. The common dose is about 1½ dram or 2 drams. Some practitioners, however, prefer the antimonial powder as being milder and more effectual; but I believe they are both perfectly innocent in the dose commonly employed; and joined with nitre, certainly produce a good effect, as an auxiliary to that important remedy, bleeding. (See Febrifuges, or Fever Medicines). Both tartarized antimony and antimonial powder are occasionally joined with camphor as a fever medicine, and sometimes, but not often, with opium. (See Sudorifics.)

ANTISEPTICS are medicines which prevent putridity, or remove it if already begun. The most efficacious are *bark* and other bitters; *opium*, *wine*, *ether*, *ammonia*, and *camphor*.

Horses do not appear to be subject to those fevers which, in the human system, are termed putrid; so that these medicines are not often required. In gangrene, or mortification of the external parts, however, they may be useful. The efficacy of these medicines seems to depend on their tonic or strengthening quality; as putridity in the living body is generally the effect of a high degree of debility. (See Tonics.) Antiseptic fomentations and poultices are employed in gangrenous, or foul fœtid ulcers, deep and lacerated wounds, and in those painful and offensive discharges of the horses heels which sometimes take place in grease. (See vol. i.; and articles Poultice and Fomentation in this volume.)*

---

* The mortification, which takes place in the wounds of horses, is a consequence of excessive inflammation, too often brought on by improper treatment, such as hot stimulating dressings and the omission of plentiful bleeding and opening medicines on the occurrence of the accident.

ANTISPASMODICS are medicines which possess the power of allaying inordinate or painful motions in the system, particularly those involuntary contractions in parts which are naturally subject to the command of the will,

Medical writers divide *antispasmodics* into two kinds; viz. stimulants and sedatives. To the former belong arsenic, preparations of copper, zinc, and iron; also ammonia, ether, essential oils, &c. The latter comprehends opium, musk, camphor, and all the vegetable narcotics.

Medicines of the fœtid kind, such as galbanum, assafœtida, &c. have also an antispasmodic quality.

When spasm arises from irritation, *sedatives* are to be given; but when it depends merely on debility, *tonics* are evidently proper. The spasmodic complaints, to which horses are liable, are locked jaw and spasmodic or flatulent colic, commonly named gripes or fret, in which the most efficacious antispasmodic is opium; but it is generally joined with others, such as camphor, assa fœtida, ether, oil of peppermint, juniper, caraways, or allspice, or other aromatics. (See vol. i. 12th Edition.)

The spices and aromatic seeds, such as cinnamon, cloves, ginger, caraways, anise-seed, &c. are often joined with opium, either in powder or infused with it in proof spirit, to form a tincture, and will be found a good antispasmodic in that form.

APERIENTS. Opening medicines. (See Laxatives and Cathartics.)

AQUAFORTIS. Weak nitrous acid. (See Acid Nitrous.)

ARABIC GUM. (See Gum Arabic.)

ARISTOLOCHIA, Virginian Snake Root or *Birthwort.* A stimulating diaphoretic and tonic. (See Birthwort.)

AROMATICS. Stimulants that possess an agreeable odour, such as cinnamon, cloves, &c.

Aromatic Confection. A cordial preparation often used in medicine, composed of cinnamon, cloves, nutmegs, cardamom seeds, saffron, prepared chalk, and sugar. It is kept by druggists under the above name, or that of cordial confection (*confectio cordiaca*); and, if not thought too expensive, may be given to horses as a cordial with warm ale.

Aromatic Powder, of the London dispensatory, is composed of cinnamon 2 oz., cardamom seeds 1½ oz., ginger 1 oz., long pepper ½ oz. mix. This is a good cordial powder, and may be given in a dose of two or three drams in warm ale, in such cases as require the use of cordials.

ARSENIC. There are two kinds of *arsenic* kept; the *white*, and the *yellow*. The latter is a combination of *white arsenic* and sulphur, either natural or artificial, varying in colour according to the proportion of sulphur, which, when considerable, gives it an orange or red colour; it is then called *realgar*, and used as a pigment only.

White arsenic is obtained in the process of roasting certain ores. The arsenic sublimes, and is found in chimneys adapted to the purpose. It is beautifully white, and very heavy, but easily reduced to a powder. The powdered arsenic of the shops is generally adulterated, and ought never to be depended upon. The practitioner should always buy it in the lump, and either powder it himself, or see it done.

White arsenic has been considered a good *tonic* for horses; and, though a violent poison in the human system, may be given to this animal with safety. From its tonic quality it has suspended, or apparently cured the *glanders;* but its effect in this way, I believe, is never permanent. It is prudent to begin with a small dose, but not less than eight grains. This may be gradually increased, and continued as long as there is occasion. In experiments on glandered horses, I have seen a dose of two drams given twice a day, and continued for a week; at which period it produced inflammation of the bowels. I have even known two drams given for two or three days successively, without any violent effect; it will sometimes, however, in that dose, occasion great disturbance in the stomach and bowels. In smaller doses it seems innocent. When arsenic is employed as a tonic or strengthening medicine, it should be finely powdered, and mixed into a ball with aniseed, ginger, or other cordials. At the same time, attention should be paid to the horse's diet, &c. It is necessary to give some mucilaginous liquid, such as *water-gruel*, or infusion of linseed, just before the *arsenic*, that it may not act upon the stomach too violently. (See Balls.)

The cases in which arsenic is said to be most beneficial, are those where horses become weak and emaciated without any apparent cause; sweating with the most moderate exercise, and almost incapable of doing a day's work.

In one case, where it was given by way of experiment to a glandered horse, it appeared to have destroyed some botts, which were found dead in the stomach. Though arsenic has been often given by way of experiment to glandered horses, even in large doses, without producing any violent effect, yet cases have occurred where moderate or even small doses have occasioned considerable disturbance in the stomach and bowels. In one case I have known it produce a fatal inflammation of the stomach in a moderate dose; the groom having persisted in the use of it after the injurious effect which it sometimes produces, had taken place. When arsenic disagrees it causes loss of appetite, dejection, uneasiness in the stomach and bowels, which gradually increases, unless it be discontinued; in such cases castor oil should be given, oatmeal gruel, and infusion of linseed. When castor oil cannot be procured, linseed oil may be substituted for it, or olive oil. In reviewing the experiments that have been made with arsenic, it does not appear that it has ever done any good in glanders, and that when it has proved beneficial in farcy, it has been given in small doses from ten to fifteen grains, or even less, joined with sublimate; and then the latter, that is the sublimate, was, I suspect, the most useful ingredient. As a tonic, it has been strongly recommended in small doses, or in solution, but it should be given with caution, and not until the vegetable tonics, such as gentian, columbo, bark, cordials, wholesome food, and occasional physic, have proved ineffectual. (See Tonics, and Cordials; also vol. i. Condition and Stable Management, 12th Edition.) Yellow arsenic, finely powdered, and mixed with lard, is sometimes used by farriers to remove worts; also in fistula of the withers and poll-evil, but its effect is sometimes violent, and extends beyond the diseased parts.*

---

* I have been led to believe that when arsenic is employed, whether as an alterative, a tonic, an anthelmintic, or as an auxiliary to mercurial preparations in farcy, or in any at-

ASSA FŒTIDA, a gummy and resinous substance, possessing a powerful and most unpleasant smell. It is much used in human medicine, as an *antispasmodic*, in nervous and hysterical complaints. In veterinary practice it is not so frequently employed, though I think I have observed good effects from it in spasmodic complaints, and some practitioners speak highly of its virtues. It is said to be serviceable in obstinate coughs, or thickness of wind, flatulent colic, and locked-jaw. It appears to be more efficacious when joined with ammonia, in the form of *fœtid spirit of ammonia*, a preparation kept in the shops. The dose of assa fœtida is from two drams to half an ounce or more; it is generally joined with galbanum, ammoniacum, opium, &c. When employed as an expectorant, *squill* is an useful addition.

The dose of the fœtid spirit of ammonia is from one ounce to one and a half ounce.

ASTRINGENTS. Medicines that diminish

---

tempts that may be made to cure the glanders, it should be given in very small doses, and reduced to the state of a very fine powder by rubbing it a considerable time in a mortar, with about ten times its weight of super-tartrate of potash. *One grain*, thus prepared and mixed with the horses corn, may be given three times a day, and continued until some effect has been produced upon the stomach or bowels, or until the disease is removed for which it is employed.

or suppress unnatural or increased evacuations, such as *diarrhœa*, *diabetes*, *&c.*

It is commonly supposed that *astringents* act mechanically, by constringing or condensing the solids. This opinion, however, does not appear to be well founded, since *opium*, which is in many cases the most powerful remedy in morbid evacuations, does not possess those principles which are said to constitute astringency, which are the *gallic acid*, and *tannin*, but in an inconsiderable proportion.

Medical writers generally class the preparations of iron, copper, zinc, and lead, with astringents: these, however, have not been found very useful as internal remedies in the horse; and whenever they prove serviceable, it is in cases of debility, in which tonics are required.

ASTRINGENTS, for diarrhœa.

No. 1.	Opium	½ dr. to 1 dr.
	Ginger	1½ dr.
	Prepared chalk	3 dr.
	Flour	2 dr.

Mix into a ball with treacle, syrup, or honey for one dose.

No. 2.	Gum kino	2 dr.
	Aromatic powder	1½ dr.

Flour	2 dr.
Castile soap	2 dr.

Honey enough to form the ball, for one dose. Mix.

Astringent Ball, for diabetes.

Opium	¼ dr.
Powdered ginger	2 dr.
Powdered oak bark	1 oz.

To be given in a pint of oak bark decoction.

External Astringent Powders.

No. 1.	Powdered alum	4 oz.
	Armenian bole	1 oz.—Mix.
No. 2.	White vitriol	2 oz.
	Flowers of zinc	1 oz.—Mix.

Lotions.

No. 3. A strong goulard mixture.

No. 4. A solution of blue vitriol.

No. 5.	Muriate of iron	1 oz.
	Water	8 oz.—Mix.

Ointments.

No. 1.	Venice turpentine	4 oz.
	Hog's lard	6 oz.

To be melted over a slow fire; and when rather cool, but while it is liquid, add sugar of lead finely powdered, two ounces. Stir the mixture until it is cold.

No. 2.	Hog's lard	4 oz.
	Oil of rosemary	2 dr.
	Finely powdered white lead	1½ dr.—Mix.

Remark.—The astringent powders and ointments are designed chiefly as remedies for the grease, after the inflammation of the part has been in great measure removed by proper poultices: but the ointment is applicable only to those ulcerations or cracks, which are so often an effect of that disease.*

---

* **ASTRINGENTS.** Medicines that diminish increased evacuations, as those of dung or urine in the diseases named diarrhœa and diabetes: they are employed also for the cure of bloody urine, and sometimes externally to heal wounds, or put a stop to that discharge from the heels, termed grease, as well as to heal those painful sores or cracks with which that part is often affected in winter.

Additional Receipts for internal Astringents.

For diabetes, or an excessive discharge of urine:

No. 1.	Catechu, or kino............	3 to 4 dr.
	Powdered ginger	1 to 2 dr.
	——— gentian	2 to 3 dr.
	Opium......................	½ dr.
	Oil of caraways	20 drops.

Syrup enough to form the ball. One dose.

No. 2.	Opium	½ dr. to 1 dr.
	Ginger	1 to 2 dr.
	Cinchona, or Peruvian bark; or when that cannot be had, powdered oak bark	1 oz. or more.

To be mixed with a decoction of oak bark, or a strong infusion of camomile flowers, and given as a drench. Either of these may be given early in the morning, and repeated at night, should it be found necessary. The mineral tonics have been recommended in diabetes, especially sulphate of copper (blue vitriol), which I have been informed has in several

BALAUSTINE FLOWERS. The flowers of the pomegranate, a weak astringent. (See Pomegranate.)

cases been found an effectual remedy for diabetes. The dose, about one dram, joined with other tonics, cordials, or astringents, such as cascarilla or cinchona bark, or the common cordial ball. The effect of these medicines is considerably promoted by a nutritious diet, moderate exercise, and good grooming. (See vol. I.) Astringents must be employed with much caution in *diarrhœa*, especially in horses. In these animals it is generally occasioned by bad hay or oats, and may be corrected by altering the diet. In horses of weak constitutions it may be brought on by drinking too freely of very cold water. In such cases the remedy is obvious. In general the diarrhœa of horses may be stopped by attention to these circumstances, especially if assisted by gruel made of arrow root or wheat flour; and it is only after this has failed that astringents should be resorted to. The diarrhœa of cattle is of a more formidable nature, and generally proves incurable, unless the animal is sheltered from the weather, and fed partly or wholly on wholesome nutritious food. (See vol. 4.) The astringents most useful in the diarrhœa of cattle are catechu, kino, oak bark, pomegranate bark, with aromatics and opium, joined with a nutritious diet. Diuretics have been prescribed, such as turpentine, which probably may be advantageously joined with tonics or cordials. Astringents are often required as external applications, as in grease, and troublesome sores about the heels or other parts, or thrushes of the frog. For such purposes finely powdered alum, either alone or mixed with pipeclay, or bole-armenic may be used, or sulphate of zinc or copper, finely powdered and mixed with pipeclay, chalk or bole; or dissolved in water or vinegar. These astringents may be occasionally mixed with lard or wax ointment, in which case they should be reduced to a very fine

BALLS. Medicine is most commonly given to horses in the form of a ball or bolus, the size

powder. Acetate of lead, (sugar of lead) is an excellent astringent for external use, whether dissolved in water or diluted with vinegar or spirit, and employed as a lotion; or with lard or other unctuous substances, and used as an ointment. (See Acetate of Lead.) Though the sulphate of copper (blue vitriol) is named here as an astringent, it may be rather considered an *escharotic* or mild caustic when used alone externally; but it may be so weakened by dilution as to become an astringent and when sufficiently weakened with water, may be applied even to the eyes. (See Copper.) Sulphate of zinc (white vitriol or copperas) is also an useful astringent when rendered mild by mixture with water or unctuous substances, such as lard; but alum is still milder, and may be used as an astringent in powder. Sulphate of iron (green copperas or vitriol) is a powerful astringent, and sometimes used internally as a tonic. The dose from one to two, or three drams. It is seldom employed externally, and then in solution only. From the foregoing observations it will be seen that the distinction between tonics and astringents is not very clearly marked. The mode of operation of astringents on the living body has been erroneously supposed to be similar to that by which dead animal fibres are constringed and condensed. That property of vegetables which is termed astringency, as it relates to dead animal matter, results from a peculiar principle termed by chemists *tannin*, and the gallic acid. The former is remarkable for its strong attraction for animal gelatine, and the latter for striking a black colour with the salts of iron. But increased evacuations or a discharge of matter or other fluid from the skin or from sores do not depend merely upon mechanical laxity of the solids, nor does the process by which they are restrained resemble that by which dead animal matter is constringed or condensed as in tanning hides. Astringency therefore in a of which should not exceed that of a hen's egg. Though named a *ball*, it is *generally rolled up in a cylindrical form, about one inch in diameter*, and two and a half in length; but the form of an egg, perhaps, is preferable. There is sometimes difficulty in giving *balls*, without using the instrument termed a *balling iron:* but there are some horses that will not take a ball by any other means. In giving a ball, the horse's tongue is drawn out on the off or right side, and held firmly with the left hand, while with the right the ball is quickly passed over the tongue into the pharynx, or top of the gullet: the moment the right hand is withdrawn from the mouth the tongue is let loose, and the ball generally swallowed. The *balling iron* is so contrived as to keep the mouth open, while the ball is forced into the throat; it is then immediately withdrawn.

medical sense is a peculiar power exerted upon living matter by which inordinate evacuations or discharges are restrained or suppressed, in a manner with which we are unacquainted. There are other vegetables, besides those above prescribed, that are occasionally used as astringents, such are tormentil, bistort, galls, madder, dragons blood, catechu, logwood, &c. each of which will be noticed under its respective name. The term astringent is often applied to those medicines or preparations that are supposed to possess the power of putting a stop to hæmorrhage or bleeding, either internally or externally from wounds; these will be noticed under the head *Styptics.*

Balls should be made at the time they are wanted; as by keeping they often become so *hard as to be almost insoluble in the stomach*, sometimes passing through the intestines unchanged: by keeping they also lose much of their strength, particularly when the ingredients are evaporable in the common temperature of the atmosphere, which is the case with camphor, ammonia, essential oils, &c. But the most serious inconvenience which arises from giving balls that have been kept until they become very hard, is, that they are liable to stick in the throat or gullet, and thereby endanger the horse's life: indeed, I have known horses destroyed in this way.

When balls are composed of very stimulating ingredients, the horse should drink a little water before they are given, to prevent too strong an action upon the stomach: it is better to give the water before the medicine, as a horse can seldom be induced to drink immediately after.

When arsenic, sublimate, or any of those corrosive medicines are given, a considerable quantity of water-gruel or decoction of linseed should be given before the ball. Balls cannot be conveniently given unless wrapped up in paper: but for this purpose the softest and thinnest should be chosen.

The balling iron is to be carefully covered with cloth or listing to prevent the mouth from being bruised by it. In holding the tongue with the left hand while the ball is introduced, great care is required, as the rough and violent manner in which this is sometimes done, often injures the tongue or lacerates the under part of it, named the bridle. The muscles by which swallowing is effected may also be seriously injured in this way. In violent colds, straugles, &c. there is often so much soreness of the throat as to render swallowing very painful and difficult; in such cases neither *balls* nor *drenches* should be given, as they are sure to do mischief by irritating the throat, and may even suffocate the animal by getting into the windpipe. (See *Drenches.*) An instrument has been contrived for introducing balls into the mouth, and is sold at the veterinary instrument-maker's, Long, Holborn, London.

When a ball is found to exceed the proper size, it should be divided and given at twice, as much injury has been done by giving balls too large, especially when they have become dry and hard, or wrapped in thick paper. I have known two horses killed in this way. In making balls, the dry ingredients should be finely powdered and well mixed; the liquid for forming them into balls should be adapted to the nature of the other ingredients. When a ball contains any acrid, or very powerful ingredient, such as sublimate or arsenic, flour and paste may be employed for mixing it up; and a small bran mash should be given a little before or after it. After giving a ball, grooms sometimes press or pinch the throat for the purpose of making the horse swallow it; but this should never be done, as it is apt to excite coughing, by which swallowing is prevented. The only thing necessary after the hand is withdrawn is to keep the mouth shut, and press the nose downwards, in a moderate degree, towards the chest. Previous to the composition of a medicine it is necessary to reflect, and consider whether its operation is required on the stomach, the alimentary part of the intestinal canal, or the large intestines. If in the stomach a drench is the best form; if on the alimentary canal or small intestines, a soft ball, containing a small quantity of potash or soda, should be preferred unless there is any ingredient in the ball which renders an alkali improper, or as Dr. Paris would say, an incompatible ingredient. There is a quality in potash which may be considered an inconvenience, but it is really an advantage; a ball so composed would continue soft, and if kept would become too soft by the moisture which the potash would attract, therefore it must be given soon after it is made. In forming a cathartic, soap is the best article that can be employed, provided it is not an incompatible ingredient, and the ball for this purpose may be made more solid than the former. Such balls, if kept some time, may be given without that danger which attends the exhibition of old or hard cordial or diuretic balls, which do not contain soap or potash. Balls which are intended to be kept some time, such as diuretics, should always be formed with soap, which may be made into a soft mass, with a little water and oil. Balls made with rosin or turpentine, nitre, &c. or cordial balls made with syrup, and kept to become hard, are not only liable to remain in the cæcum or blind gut, causing the conglutination of the earthy matter contained in the excrement, or serving as a nucleus for it, and producing the large stones sometimes found in that part; they are liable also to stick in the esophagus or gullet, and so low down, that is within the cavity of the chest, as to remain undiscovered, and cause the animal's death. I have met with such cases, and was not aware of the circumstance till after the horse's death, when I discovered the ball wrapped in brown paper and firmly lodged in the lower part of the esophagus. In the three cases I have seen, the ball was of the cordial kind, and two of them wrapped in brown paper: in one of them sulphur was an ingredient. One of them was lodged about the pharynx, and produced a fatal inflammation of the windpipe and lungs. This horse was labouring under a severe catarrhal affection at the time the ball was given, attended probably with sore throat, in which case *no* attempt should ever be made to give either balls or drenches. In the other two cases the balls were lodged in the lower part of the esophagus. The symptoms were those of choking, terminating in suffocation. In one case the appetite and power of swallowing continued until the upper or all that part of the esophagus that could be felt in the neck was distended with masticated food, as if it had been rammed into it, so that the animal was at length suffocated. It has been observed, that in making a cathartic ball, soap is the best thing that can be employed for giving it that form: such balls are not required to act until they get into the cæcum; and if properly formed with soap, and given when the stomach is empty, they will generally arrive at that part undissolved. There they will gradually undergo solution, and produce that effect which cathartics are expected to produce, a complete discharge of the fæces. Thus will the liver and the spleen be purged of their impurities, and a healthy state of the digestive organs produced; for the spleen, as well as the liver, is a depurator of the blood, and that I believe is its only office, and a very important one it is, for it is an auxiliary to the liver. Cathartics then are the balls which are required to act on the large intestines only, of which, in the horse, the cæcum is an important one (for it is not a second stomach as some authors have imagined, and I formerly believed it to be), and not on the stomach and *alimentary* canal, as I have stated in former editions of this book, and in the first volume. Cathartic drenches, if this opinion be correct, must be improper. Reflections upon this subject, if assisted by careful observation on the effects of the medicines generally employed, may lead practitioners to the opinion that the only useful medicines are those which depurate the blood, and give vigour to the muscular system.

BALSAMS. Balsams are generally fluid, of various degrees of thickness, odorous, and combustible: they resemble resins, being soluble in spirit of wine; and when thus dissolved, impart to water a sweetish taste, and a milky appearance.

BALSAM, ANODYNE, or Bate's Anodyne Balsam.

Take, white soap	4 oz.
Camphor	2 oz.
Opium	1 oz.
Oil of rosemary	½ oz.
Rectified spirit	2 pints, for strains.

Balsam of Canada is a very pure kind of turpentine; and though preferred on this account to Venice and common turpentine, is unnecessary in veterinary medicine, being very expensive; whereas Venice turpentine is much cheaper, and I believe equally efficacious.

Canada Balsam is a strong diuretic in the dose of one ounce or more; in smaller doses it has been recommended in chronic cough, and diseases of the lungs.

Balsam of Copaiba, or *Capivy*, possesses nearly the same properties as the preceding. It has been prescribed in the flatulent colic or gripes; and in chronic cough with good effect.

The dose is about one ounce, or two ounces, or more.

Balsam, Friar's, or *Traumatic*, now named compound Tincture of Benjamin, or Benzoin, is made in the following manner:

Benzoin	3 oz.
Storax balsam, strained	2 oz.
Balsam of tolu	1 oz.
Aloes	½ oz.
Rectified spirit	2 pints.

Macerate for fourteen days, and filtre or strain through blotting-paper.

Balsam of Gilæad is nearly similar to the *capivy*, but more pleasant. Many virtues have been attributed to these balsams by medical writers: they were supposed to heal ulceration of the lungs, kidneys, or other internal parts, and to be powerful corroborants. They do not appear, however, to possess these qualities, nor do they seem to differ much from *turpentine* in their medical virtues. (See Turpentine.)

Balsam of Peru. This is of a different kind from the former balsams, being more stimulating, and better calculated as a remedy for obstinate coughs: it should be assisted, however, by other expectorants, such as *squills*.

The dose is from one to two drams. (See Expectorants and Pectorals.) It is sometimes used externally as an application to irritable ulcers.

Balsam of Tolu. This is generally in a solid form, of a light yellowish colour, and fragrant odour: it is used for the same purposes as the balsam of Peru, in doses from one to two drams.

Balsam of Sulphur. This is made by boiling sulphur and olive oil, until they are united: they from a dark-coloured mass rather like treacle in appearance, but more tenacious, and of a very disagreeable odour.

Balsam, of sulphur is used as an *expectorant;* but farriers frequently employ it in recent inflammatory coughs, which is highly improper. It may be useful, however, in *chronic* coughs.

The dose is from half an ounce to one ounce, mixed with anise or liquorice powder.

BARBADOES TAR is a bituminous substance, brought from the island of Barbadoes. It is nearly of the colour and consistence of common tar, but smells differently, and its colour approaches more to brown. It has a considerable diuretic power, and is said to be useful in *chronic coughs.* Farriers frequently use it for this purpose; but by giving it indiscriminately they often do mischief. They also employ it as an external remedy in strains and bruises, generally dissolved in oil of turpentine and oil of elder.

BARBADOES ALOES. (See Aloes, Barbadoes.)

BARILLA. The name of a sea plant, from the ashes of which *mineral alkali,* or *soda,* is obtained in an impure state. (See Alkalies.)

BARK, PERUVIAN (CINCHONA), or *Jesuits' Bark.* Though in the human subject bark is an useful tonic and febrifuge medicine, it has no very remarkable effect on the horse. I have seen it do good, however, in gangrene, or mortification of the external parts, when mixed with opium and ginger. It is serviceable also in cases of debility, arising from large suppurations, and where there is a copious discharge of matter. It may be employed likewise in *diabetes*, a disease consisting in an excessive discharge of urine.

The dose is from six drams to one ounce and a half or two ounces.

There are three sorts of bark: the pale or *Jesuits'*, the *red*, and the *yellow*. The first is considered the best, and is most commonly used; but the others do not greatly differ in their effects. *Oak bark* would probably be found an useful substitute for Peruvian bark. By boiling bark in water a considerable time, its virtues are said to be considerably diminished.*

---

* Gray in his Supplement to the Pharmacopœias, after describing several species of bark, observes, "most of these barks, as soon as they come out of the merchant's hands, are sold by the druggists under three or four names only, viz.—1st. Peruvian, grey or pale bark; 2d. yellow bark; 3d. red bark; 4th. St. Lucia bark; each of which is distinguished into quilled bark, or that taken off the smaller branches, or from the younger trees, rolled up like cinnamon with the outer coat not taken off; and the large flat pieces with or without the outer coat." (See also Thomson's London Dispensatory.)

The bark of certain English trees has been proposed as a

BARLEY is sometimes used as food for horses; but is less fit for that purpose than oats or beans; I have known it tried as a substitute for the former, when it was found difficult of digestion, and productive of many complaints: if horses, however, be accustomed to it gradually, it proves very nutritious and useful.

Boiled barley is recommended by Gibson as nutritious food, easy of digestion, and fit for sick or convalescent horses. Barley-water, sweetened, may be found an useful drink in fevers, or may be employed as a vehicle for cooling medicine, such as nitre. It is made by boiling pearl barley for two or three hours in water. A nutritious gruel may be made with barley meal, though perhaps inferior to that made with oat-meal or wheat flour. (See Restoratives and Gruel.)

BARYTA, Barytes, or terra ponderosa, or marmor metallicum. Muriate of baryta has been employed in human medicine as a tonic, but it has not yet been introduced into veterinary practice. It appears to possess consi-

---

substitute for the Peruvian or Cinchona bark, but none of them seem to have answered the purpose in human medicine. For veterinary purposes the oak bark is more likely to prove useful as a tonic than any other, (see Tonics,) and may probably be substituted for Cinchona, with good effect, when the price of the latter prevents its being employed.

derable power, being considered poisonous in large doses, and should therefore be used cautiously.

BASILICUM, or *basilicon*, a digestive ointment, composed of rosin, bee's wax, and olive oil, of each equal parts. It is now named ointment of yellow rosin. By adding to it a little oil of turpentine and verdigris it may be employed as a digestion for horses. (See Digestives.)

BATHING. A remedy seldom employed in the diseases of horses. I once saw an obstinate case of costiveness removed by driving the animal into a river. It is said, that lameness, arising from strains, may be cured by making the horse swim; but I am inclined to doubt the efficacy of this practice. The warm bath would probably be found useful in some cases, and appears to be used in the French veterinary colleges. (See vol. i. Preface to the 12th Edition.)

BAY TREE. The leaves and berries of the bay tree are employed in veterinary medicine. The former as an ingredient in the decoction for fomentations; the latter as a stomachic, and as an ingredient in that ancient, but still celebrated, stomachic powder, named diapente or diapenty. (See Stomachics.)

BDELLIUM. A gum resin not very unlike myrrh, but weaker.

BEANS are often used as an article of diet. If *given* moderately to horses that work hard, they prove extremely useful and invigorating; but to such as are not much worked they often do harm, by disposing the system to inflammatory complaints. Beans should be bruised or ground, being more easy of digestion in that state. There is a bean bran sold by millers, the fine flour being used sometimes in bread, which makes a good feed when mixed with oats.

BEER OR ALE. An useful vehicle for cordials and tonics, and when mild and perfectly free from harshness or acidity, is of itself a good cordial, especially when given warm with a little grated ginger. It may be given also with oatmeal or wheat flour gruel as a restorative, when a horse is exhausted by fatigue and long fasting. (See Gruel and Restoratives.) In colic, gripes, or fret, when medicines cannot be procured, warm ale with a little gin, or other spirit, and ginger may be given.

BEE'S WAX. See Wax.

BELLADONNA, Deadly Night Shade. A powerful narcotic. The extract of Belladonna is sometimes applied to the eye to cure a morbid contraction of the iris, or rather of its circular fibres. (See vol. i.; also the Author's Veterinary Dictionary, article Eye.)

BENZOIN, OR GUM BENJAMIN. A concrete resinous substance of a yellowish colour, inclining to pink, and variegated with small white masses. By exposure to a strong heat, it gives out an extremely light flowery substance, which is termed *flowers of Benjamin.* This is beautifully white and fragrant, and used in medicine in coughs, and other complaints of the lungs. In veterinary medicine neither the resin nor flower are employed, nor do I know any disease in which they are likely to be of use.

The former is an ingredient in the traumatic or Fryar's balsam, now called compound tincture of Benjamin; and the latter is employed in making paregoric elixir, or camphorated tincture of opium.

BEZOAR STONE is found in the stomach or gall bladder of certain animals. It was formerly esteemed as a cordial, but is not now used.

BIRTHWORT. This root, though formerly celebrated, is now rarely employed. Farriers sometimes use it as a stimulant and tonic, but it is now superseded by more valuable medicines. (See Tonics.)

BISTORT. The roots of this plant are considered the most powerful of the vegetable astringents: they have been recommended as a *styptic*, to restrain hæmorrhages, but ought never to be depended upon for this purpose. Many imaginary virtues have been attributed to this plant: perhaps as a powerful astringent it may be useful in certain cases of diarrhœa, particularly that to which horned cattle are subject. The dose is from half an ounce to one ounce, and may be given either in powder, or boiled in water and made into a drench.

BITTER APPLE. See Colocynth.

BITTERSWEET. Woody Night Shade. Diuretic and narcotic.

BITTER WOOD. See Quassia and Gentian.

BITTUMEN MINERAL OILS. Certain inflammable substances are thus named, obtained from the mineral kingdom, among which are Barbadoes tar, Naphtha, Amber, &c.

BLEEDING. This operation is frequently required in the diseases of horses: and if employed seasonably, and to a sufficient extent, is the most efficacious remedy we are acquainted with. When a horse appears dull and heavy, and indifferent about his food, by bleeding we often prevent a fever. If a horse is bled at the commencement of a cold, the complaint generally proves moderate, and of short continuance. In all cases of internal inflammation, or symp-

tomatic fever, bleeding is the most essential remedy, provided the operation be performed at an early period, and the blood drawn in sufficient quantity. In such cases I have often taken away five or six quarts, and repeated the operation the same or the following day when it appeared necessary. By bleeding copiously at first, those formidable diseases are crushed at once; while by suffering them to proceed or become at all violent, which they will do unless this practice is adopted (or if only a small quantity of blood is drawn), they generally prove fatal: nor will bleeding then be of any service.

BLEEDING is either general or local: that is, it is done either so as to affect the system in general, or a particular part only. For general bleeding, the jugular or neck vein is most convenient.

When the vein is firmly pressed with the fingers of the left hand, the blood is prevented from descending, and that part of the vein which is above the fingers is considerably distended, and becomes very conspicuous. In this state it may be easily opened with a lancet held in the right hand. The vein will continue to bleed as long as the pressure below is continued.

Farriers bleed with a *ſleam*, which, though apparently a clumsy method of operating, is certainly safer in unskilful hands. In topical bleeding, a vein is chosen as near as possible to the affected part, or the vessels covering the part are opened: in the inflammation of the eye, for example, it is done by scarifying the inner surface of the eye-lid, or by opening a small vein which is easily seen going from the inner corner of the eye towards the nose.

A graduated tin vessel, capable of containing six or seven quarts, is very convenient for the purpose of receiving the blood; every pint being marked on the inside of the vessel, so that the quantity of blood that is taken off may be exactly known. The blood should always be preserved, that we may judge from its appearance of the nature of the disease, and whether it is proper or not to repeat the operation. When it continues fluid a considerable time, it denotes an inflammatory state of the system. Should a whitish or light buff-coloured jelly appear on its surface, after it has coagulated or settled, and should this jelly be of considerable thickness, rather firm, not easily penetrated by the finger, we may be satisfied that the horse's complaint is inflammatory; that bleeding was a proper remedy; and that, if the symptoms continue, the operation may be repeated with advantage: but if the blood coagulates quickly, is uniformly of a dark liver colour, loose and easily broken, with a considerable quantity of water upon its surface denotes debility, and shows that the disease arises from a weakness of the system; that instead of *bleeding*, *tonic* and *cordial* medicines are to be employed, with every thing that may tend to restore the animal's strength.

In order to judge correctly by the appearance of the blood, it should be drawn from a large orifice, and not suffered to run down the sides of the vessel which receives it. The first quantity that is drawn should be put aside for examination, and not shaken or disturbed in any way until it has perfectly coagulated.

When bleeding is employed as a preventive, or in any slight complaints, from two to three quarts may be taken off, according to the horse's strength and condition; but in cases of internal inflammation or fever, a more copious evacuation is necessary.

When horses are taken from camp or grass, and put into warm stables, they are very subject to inflammatory complaints and dangerous fevers: under those circumstances, moderate bleeding now and then will prevent such diseases. Horses that are getting into condition, as it is termed, are liable to similar disorders, unless moderate bleeding is occasionally employed. I am inclined to believe, however, that it is a bad practice to bleed often upon trifling occasions; it is liable to induce a plethora or fulness of habit, whereby a horse is rendered more susceptible of disease than he would otherwise be. Moderate purging and regular exercise, with a proper regulation of diet and temperature, are fully adequate to the prevention of disease on those occasions; but these are too often neglected.

It has been asserted that it is seldom necessary to pin up the orifice, which is made in the skin by bleeding. I grant there is not often any danger to be apprehended from its bleeding again; but unless it is pinned up, that is, unless the lips of the wound are brought into contact, and kept in that situation, by passing a pin through the edges of the skin, and twisting a little tow round it, as is generally done by farriers, inflammation and swelling will sometimes take place in the wound, and matter will form in consequence. The *fleam* has been found upon many occasions, particularly for opening the neck vein, a better instrument than the *lancet:* the latter makes an orifice in the skin, scarcely larger than the vein; and as the horse is generally a little restless, the blood soon gets between the skin and the vein, plugging up the orifice in the latter, and sometimes diffusing itself in the cellular membrane, so as to cause a swelling. The lancet, however, in skilful hands is a neater method, and more convenient for horses that are very shy and difficult to be bled in the common way. I have before endeavoured to show the advantage of early and copious bleeding in the fevers of horses, whether simple or symptomatic. (See vol. i., Bleeding and Fevers.)

I think it necessary, however, to repeat, that it is the most important remedy we can employ on these occasions, and may be carried to the extent of five or six quarts, or even seven in large strong horses, with the best effect. The practice of bleeding moderately in *fevers* is highly to be reprobated: it raises for a short time delusive hopes of a recovery, but scarcely ever proves effectual. I do not mean to recommend such plentiful bleeding on every occasion, or when a horse is merely affected with a catarrh or cold; it is only proper in cases of *fever*, depending either upon *internal inflammation*, upon an undue determination of blood to the interior parts of the body, or upon general inflammation. The disease termed mad staggers must be included, that is inflammation of the brain.

BLISTERS. This term is applied to medicines that inflame the skin, and cause watery bladders to rise upon its surface: the most useful of this kind is the cantharis, or Spanish fly, which forms the principal ingredient in all our blisters.* There are many others, however, which are generally mixed with it as auxiliaries: among these are helebore, euphorbium, turpentine, &c.

Blisters are of great use in veterinary medicine: they are extremely efficacious in dispersing callous swellings, the consequence of *strains, bruises*, &c.

In inflammation of parts remote from the surface, they are of great service. When the internal parts of the foot are inflamed, relief is generally obtained by blistering the pastern, provided the subordinate or auxiliary remedies are not omitted, such as paring the sole, soaking the horny part of the foot in warm water, or applying a poultice to it, and giving a dose of physic.

Blistering is employed also for *curbs, windgalls, spavins*, &c. It is serviceable also in inflammation of the internal organs. When the lungs are inflamed, for example, by blistering the sides extensively, we lessen the determination of blood to the diseased part, and thereby afford great relief. (See vol. i.)

Broken knees, unless skilfully treated, frequently leave a callous swelling on the part;

---

* The Spanish fly is now named *lytta vesicatoria* by the London College, 1820.

for the removal of which, blistering should always be employed. When blisters are properly made, and free from any caustic ingredients, such as sublimate, vitriolic acid, &c., there is no danger of destroying the hair; and if the first blistering does not prove effectual, it may be repeated until the desired effect is produced.

Before a blister is applied, the hair should be closely cut off, or even shaved off, if the situation of the diseased part will admit of its being done without wounding the skin; but good scissars, or shears, if skillfully used, will answer the purpose sufficiently. If the skin is scurfy it may be washed with flannel, soap, and warm water, and be made perfectly dry before the blister is applied. In some situation the hair may be carefully burnt off with a candle; but this should be done by persons accustomed to that operation, which in stable language is termed *singeing:* in blistering the throat, in waggon horses, this is a good method of removing the hair. Blisters are generally employed in the form of ointment, but on some occasions they are preferred of a thinner consistence, or in the form of liniment, or even still thinner or more fluid, and are then named liquid blisters. Formulæ, or receipts for each of these, are subjoined. Though a variety of ingredients are generally used in blisters, I beieve that the cantharis or Spanish fly is the best; and if not injured by long keeping or adulterated, is the only blistering ingredient required for common purposes. (See *Spanish Flies.*)

BLISTER OINTMENT.

No. 1.	Hog's lard	4 oz.
	Oil of turpentine . . .	1 oz.
	Powdered cantharides	1 oz.—Mix.

Melt the lard by a gradual heat; remove it from the fire, and stir in the turpentine, then add the cantharides, and continue stirring until it is cold.

No. 2.	Hog's lard	6 oz.
	Oil of rosemary	½ oz.
	Oil of origanum	2 dr.
	Sublimate (dissolved in 2 dr. of muriatic acid . .	1 dr.
	Powdered cantharides	6 dr.

Mix as above.

No. 3.	Oil of turpentine	2 oz.
	Sulphuric acid, by weight	1 oz.

Mix cautiously, under a chimney, or in the open air, and avoid the suffocating vapour which will arise. When perfectly united, add hog's lard, from six to eight ounces, or more, according to the strength required. When a blister is wanted, take two ounces of this ointment and rub up with it from two to three or four drams of recently powdered cantharides. This ointment may be made still stronger by the addition of a little calomel or sublimate at the time it is wanted, but the latter must be used only in a small proportion, and with caution, as it is apt to ulcerate the skin and cause sloughing, and a permanent blemish. It should therefore be applied to a small surface only as in bone spavin or splent. Neither the cantharides nor the calomel, or sublimate, should be kept ready mixed with the above ointment, as it is probable they would undergo some change, and be rendered inert after a little time. The above recipes may be varied by substituting mercurial ointment, or oil of bay, or any other unctuous substance for hog's lard, or oil of origanum, for oil of turpentine. And if a more solid form is desired, it may be obtained by the addition of a little bee's-wax, suet, or resin.

BLISTERING LINIMENT.

No. 1. Olive oil ....4 oz.
Oil of turpentine ....1 oz.½
Recently powdered cantharides } from ¼ oz. to 1 oz.

Mix.

No. 2. Olive oil .... 4 oz.
Oil of turpentine .... 1 oz.

Oil of rosemary, oil of origanum, and liquid ammonia	of each ½ oz.
Recently powdered cantharides	…… 1 oz.

Mix.

Liquid Blister.

No. 1.	Powdered cantharides	.. 1 oz.
	Boiling water	……… 6 oz. to 8 oz.

Macerate for twenty-four hours, and then add rectified spirit of wine, four ounces; corrosive sublimate (previously dissolved in three or four drams of muriatic acid), one dram. To be kept well corked for two or three weeks before it is used, it may then be either strained through blotting paper and used as a transparent tincture, or merely shaken up and employed as it is.

No. 2.	Rectified spirit	…………… 2 oz.
	Liquid ammonia	…………… 2 oz.
	Oil of turpentine, origanum, or rosemary (either)	1 oz.
	Powdered cantharides	..6 dr. to 1 oz.

Mix.

After a blister has been applied to the legs or hocks, the litter should be removed, and the horse's head should be confined or tied to the rack to prevent his rubbing the part with his nose; but this may be done better by putting what is termed a cradle or necklace round his neck; he may then be turned loose into a box and exercise himself which is very desirable after blistering. It is necessary to keep the cradle on for about a fortnight, as they are apt to gnaw the part or injure the skin, when the effect of the blister is going off, and an itching only remains.

The following is a convenient method of making a blister when the other ingredients cannot be obtained. Take of the blistering plaster, sold by druggists, two ounces, melt or rather soften it by a gentle heat, and mix with it oil of turpentine from half an ounce to one ounce.

BLUESTONE. Blue Vitriol, *Sulphate of Copper*, or *Vitriolated Copper*. This is composed of oxyd of copper and sulphuric acid. It is extremely useful, as a mild caustic and detergent, and is an excellent application to foul ulcers. The best method of using *blue vitriol* is in a state of solution; that is, put as much of it (in powder) into a pint of water as the latter is capable of dissolving; and to facilitate the solution, let the water be boiling hot: this solution may be used alone, or diluted with water, as the circumstances of the case may require; it may also be made stronger by the addition of *strong nitrous acid*, or sulphuric acid. When *blue vitriol* is used in substance, it should be finely powdered, mixed with bole, and sprinkled on the ulcer.

In bad broken knees, the ligaments are often wounded, and there is generally some difficulty in healing the wound: in such cases, after the inflammation has subsided, the *solution of blue vitriol*, may be applied hot, with good effect.

As an internal remedy, blue vitriol is said to possess a *tonic* power; but it should be given cautiously. I once saw six ounces given to a glandered horse, by way of experiment: it soon destroyed the animal, by occasioning the most violent inflammation of the stomach and bowels: it appeared to have acted as a caustic on the former organ.

In giving blue vitriol, I would recommend a very small dose at first, not more than one dram, or even half a dram, which might be given in the form of a ball, mixed with flour and syrup.*

---

* In the present edition this article should have been noticed under the head *sulphate of copper*, which is now the name of the preparation. Under the head Astringents it has been noticed as a remedy for diabetes; it has been prescribed also in farcy, generally in conjunction with sublimate or arsenic. I have been informed that it has been given with good effect also in opthalmia or moon blindness, probably when that disease was attended with debility; but its

BOLE ARMENIC. A red clay, containing *a small proportion of oxide of iron,* often used *by farriers as an astringent in diarrhœa,* or in bloody urine; but it certainly does no good in those complaints. It is sometimes, however, serviceable as an application to ulcers, where the discharge is thin, and acrimonious.

BORAX, when dissolved in water, is sometimes applied to the mouths of young horses that are inflamed by cutting teeth: I have found, however, that alum, which is much cheaper, is equally effectual.

BOX. The leaves of box have been said to destroy worms; but if really *anthelmintic,* it is certainly too weak to deserve our attention. It may be given with the horse's corn. It is said to have a purgative quality.

BLUE OINTMENT. (See Mercurial Ointment.)

BRAN. An useful article of diet for sick horses, and a preparative for purgative medicine or physic, as it is commonly termed. (See

---

most common use is for external purposes, when it acts as a mild caustic, a detergent or an astringent, according to the degree in which it is diluted or mixed, either with water, vinegar, diluted spirit or unctuous substances. With the latter it may be intimately incorporated by being finely powdered and well rubbed in a mortar, or by the assistance of heat. In this way a good digestive or detergent ointment may be formed.

Cathartics.) Such bran should be chosen as is *sweet, or free from any musty smell, which it generally acquires by keeping, especially in* damp places. There is a superior kind of bran termed pollard, which should be preferred. *Bran mashes* are made by pouring boiling water on bran, and letting it stand in a pail until sufficiently cool.

Bran Water, or *White Water*, is made in the same manner, using only a larger proportion of water. Bran is of an opening quality, and therefore a proper diet for horses that have but little exercise, it may be occasionally mixed with oats or split beans. A fine flour is prepared from beans, leaving a nutritious kind of bran which is sold by millers. Bran, with linseed powder or oatmeal, makes a good poultice. (See Poultice and Mashes.)

BREAD. Bread, made from bean flour, oatmeal, &c. is sometimes prepared for horses in training them for racing or hunting.

BRICKS, oil of. An old preparation distilled from a mixture of brickdust and olive oil, used formerly in strains. Barbadoes tar dissolved in oil of turpentine is generally sold as such when it is enquired for.

BRIMSTONE. (See Sulphur.)

BUCKBEAN. An useless plant; and though valued formerly, is now scarcely ever employed.

BUCKTHORN. The juice of the berries of this plant is supposed to possess a purgative quality, and is generally made into a syrup with sugar, though farriers sometimes employ it with other purgatives: it is certainly useless as a medicine for horses.

BURDOCK, a common plant, known by its burs. The leaves are said to be diuretic; and are employed in making the green elder ointment, or Pompilion (*Ung. Populeon*), so much used by farriers.

BURGUNDY PITCH. The inspissated juice of a species of fire-tree: it somewhat resembles yellow resin, but it is less brittle and transparent. What we commonly meet with in the shops, appears to be an artificial composition. *Burgundy pitch* is often used by farriers in making *charges* and strengthening plasters, also in some of their ointments.

BURNT ALUM. (See Alum.)

BUTTER OF ANTIMONY, or *Muriate of Antimony.* A dark-coloured liquid, possessing strong caustic powers, and composed of antimony and muriatic acid.

It has been highly spoken of as a remedy for quittors and canker, and other ulcers of a similar kind: it is certainly a strong caustic, and may be employed in cases where such applications are required.

There is something peculiar, however, in this caustic; which is, that by coming into contact with a moist part, it is immediately decomposed; so that when applied to ulcers *its action is of very short duration.*

CABBAGETREE BARK. *This* is said to be a powerful anthelmintic in the human body, and may therefore be worth a trial in veterinary medicine. The dose for a man is from one scruple to half a dram; a horse would require, perhaps, three or four drams.

CASEPUT OIL. An essential oil, of a highly stimulating quality, somewhat resembling a mixture of oil of turpentine and camphor, but more fragrant and agreeable. Internally it is said to be diaphoretic and antispasmodic, but it is more commonly employed externally in rheumatic pains, strains, &c. It may be used alone or diluted with olive oil. A mixture of oil of turpentine, camphor, and oil of rosemary is a good substitute for it.

CALAMINE, or *Lapis Calaminaris.* An ore of zinc, which when powdered, resembles a white earth inclining to a red colour. It is employed for the purpose of drying or healing ulcers which discharge a thin acrimonious matter; it is also mixed with hog's lard, oil, and wax, so as to form an ointment, which is used for the same purposes. This ointment, or cerate, is the celebrated *Turner's Cerate.*

CALAMUS AROMATICUS. *Sweet Flag.* The root is tonic and aromatic.

CALOMEL, or *Submuriate of Mercury*, or *Quicksilver,* is the most useful of the mercurial preparations, and composed of oxide of quicksilver and muriatic acid. When prepared, it is a fine white powder, rather inclining to yellow, and very ponderous. It is the most efficacious *anthelmintic* we are acquainted with (see Anthelmintics), and an excellent *alterative.* When a brisk purgative is wanted, calomel may be added to the common physic, which is composed chiefly of aloes.

Though *calomel* possesses these useful qualities, it must be given with caution, and its effects carefully watched; as it sometimes acts very violently and unexpectedly on the stomach and bowels, and induces a dangerous degree of weakness. Salivation is sometimes the effect of *calomel,* when given daily as an alterative, or as a remedy for farcy or mange; the mouth becoming so sore, and the tongue so swollen, as to prevent the horse's feeding. When these accidents occur, the medicine should be discontinued a short time, and the horse allowed to drink plentifully of water-gruel, linseed infusion, or any other mucilaginous drink. When the bowels are affected by it, opium is the best remedy, should arrow-root gruel or wheat flour gruel prove ineffectual. In some cases, where it has produced great irritation about the *anus* or bladder, opium should be given in the form of *glyster*. (See Glysters.) If the mouth becomes very sore, let it be washed with a solution of alum, by means of a syringe.

Whenever *calomel* is given, the horse must be kept warm, drink warm water, and have regular exercise. When calomel is given as an anthelmintic, or as a purgative, the dose is from one dram to two; as an alterative, from fifteen grains to half a dram. Calomel generally acts upon the kidneys, increasing the discharge of urine. (See Alteratives and Anthelmintics.)

CALUMBA ROOT, or *Colombo*, according to the Edinburgh and Dublin dispensatories. A good tonic, and stomachic generally joined with an aromatic and sometimes with rhubarb. The dose about two or three drams. (See Tonics and Stomachics.)

CAMOMILE. A bitter herb, the *flowers* of which are employed in fomentations. No other use is made of *camomile* in veterinary practice.

CAMPHOR is procured from a Japanese tree, and brought to Holland, where it is purified from much extraneous matter; from thence it is imported into this country.

Camphor is a medicine of considerable efficacy in the diseases of horses, though scarcely known to farriers as an internal remedy. It is a powerful sedative and antispasmodic, and is often employed in fevers. When joined with nitre, it gives speedy relief in suppression of urine, or difficulty in staling; except when it arises from inflammation of the kidneys,—but in the horse this complaint is generally caused by distended bowels.

Camphor is a good remedy in flatulent colic, or gripes, particularly if joined with oil of juniper or other carminatives. (See Carminatives.) It has been recommended also in locked-jaw, mixed with opium. The dose is from one to two drams; though it may be given, I believe, to a greater extent without danger. The dose I employ is one dram and a half, or two drams.

As an external remedy, *camphor* is much used: it is generally dissolved in spirit of wine, oil of turpentine, or common oil, so as to form embrocations for strains, bruises, hard swellings, &c. Soap is often added to those solutions, and sometimes oil of rosemary. (See Embrocations and Antespasmodics.)

CANELLA ALBA. Canella bark. An

aromatic stimulant, which forms a good stomachic with colombo, gentian, rhubarb, &c. It is sometimes joined with aloes, and was then named *hiera picra.* The dose about two or three drams or more.

CANTHARIDES, or *Spanish flies.* These insects are found adhering to trees of different kinds in France, Germany, and Spain: those from the latter country are considered the best.

Cantharides are so very acrimonious, that they inflame and excoriate the skin; and hence raise a more perfect blister than any other substance: this property renders them extremely useful in veterinary practice, in which a good *blister* is the most important of all external remedies. *Cantharides* should be finely powdered; but previously to this operation they should be sifted, that they may be free from a great deal of dust and useless matter, which we generally observe with them. When powdered, they may be either formed into an ointment, a liniment, or a spirituous tincture; but the former is the best form, and most commonly used. (See Blisters.) " *Centharides* are imported from Sicily and Astracan, in casks and small chests. The best are of a lively fresh colour, a small size, and not mouldy, nor mixed with the Melolontha *vitis;* an insect resembling them in some degree but possessing no vesicating property. It may be distinguished by its form, which is more square than that of the Spanish fly, and by its black feet. If Spanish flies have been properly dried and kept in a well stopped glass bottle, they retain their acrimony, and remain unchanged a great length of time; but sometimes they are attacked by a small worm which, however, feeds on the inactive part only of the fly, reducing it to a powder that still possesses the active quality of the entire insect. They soon putrify when kept in a damp place, and therefore should be occasionally spread out to the air." THOMSON'S *London Dispensatory*.

Tincture of Cantharides is sometimes given internally in human medicine, and has been prescribed for horses in incontinence of urine. (See vol. i.) Writers on Cattle Medicine have very improperly recommended Cantharides as an aphrodisiac. (See vol. iv. Preface.)

CAPSICUM. The pod, when powdered, forms *Cayenne pepper*, which is a powerful stimulant. I have been informed, it is used with the best effect as a horse medicine in the East Indies; but could not learn precisely what the complaints were in which it was employed, though I believe it was the *flatulent colic*, or *gripes*. It has been given in cases of flatulency, weakness of the stomach, and indigestion, with success, in doses of half a dram, joined with a little powdered aniseed, licorice, and syrup, so as to form a ball. (See Cordials.)

It appears, however, to be inferior to good ginger as a cordial and stimulant, though more pungent or acrimonious.

CARAWAY. The seeds are much used in veterinary practice, as a *cordial* and *carminative.* The essential oil, which contains all the virtues of the seed in a concentrated state, is the most convenient for veterinary purposes; the dose of which is from half a dram to a dram: it may be mixed either with ale, milk, or water, into a drench; or formed into a ball with licorice powder, ginger, and honey. When the seeds are made use of they should be powdered, but never boiled in any liquid, according to the practice of farriers, as their virtues are thereby in a great measure evaporated: nor should they be purchased in powder; for by being kept in that form, their essential oil is gradually dissipated.

In whatever form it may be used, *caraway* is certainly an useful *cordial* and *carminative.* The dose of the *seed* is about an ounce; to which may be added a dram or two of powdered ginger. It may be useful to observe, that from twenty to thirty drops of *oil of caraway* are an useful addition to aloes, in making a purgative ball; or, as it is commonly termed, *a dose of physic*. (See Cordials, Carminatives, and Cathartics.)

Though the essential oil is the most convenient form for giving caraways, it is not perhaps so grateful to the stomach, or likely to produce so gradual or durable a stimulus as the *recently* powdered seeds. Caraways, though unpowdered, lose much of their power by long keeping, especially in damp places. When the essential oil is employed, that which is pure should be chosen, as it is often adulterated with spirits of wine. The best manner of mixing the oil is to rub it in a mortar with sugar and treacle, and add the ale or water gradually. Or it may be mixed in the proportion of one part of the oil to three of spirit of wine, and kept as an essence of caraway: this, when mixed with ale or water, will be more uniformly diffused through the liquor than the oil alone, which will immediately float on the surface.

CARBON. Pure charcoal. (See Charcoal.)

CARBONATES. Combinations of alkalies, earths or metallic oxides with carbonic acid. Such as carbonate of potash, carbonate of lime, and carbonate of lead, &c. (See Potash, Lime, and Lead, &c.)

CARBONIC ACID GAS, or *Fixed Air.* In medical practice this air has been employed, on account of its *antiseptic* quality, in foul and fœtid ulcers, or in gangrenous wounds. It is generally applied by means of a fermenting poultice, composed of oatmeal and yeast. This poultice has been found serviceable in that disease of the horse's heels termed grease, generally correcting the offensive smell which attends it.

CARDAMOM SEEDS. There are two sorts of cardamoms, the *greater* and *lesser:* the latter are commonly sold in their shells or pods, from which they are easily freed; they are preferred in medical practice, probably on account of their more grateful smell and taste, but the larger sort, which are generally termed *grains of paradise* (see Grains of Paradise), are better for veterinary purposes, being a stronger stimulant, and much cheaper. The lesser cardamoms make an elegant cordial, and are possessed of considerable strength; their pods also have the same properties, but in a weaker degree. The dose, when the pods and seeds are powdered together, is from one to three drams. *Grains of Paradise* will be noticed in its proper place.

CARDIACS. (See Cordials.)

CARMINATIVES. Medicines that correct flatulency in the stomach and bowels. The disorder for which Carminatives are employed is named *flatulent colic;* also *gripes*, *fret*, and *botts*. This disease often happens to horses, and from the nature of it not being understood, often proves fatal. We often hear of horses dying of inflammation of the bowels, and this is really the case, but the inflammation is produced by the flatulent colic. When air or wind is generated in the horse's stomach it cannot escape upwards as in man, and is prevented from passing in the other direction by a valvular structure at the part where the small intestines terminate, that is, in the cæcum or large intestine, which in the horse is very capacious. As the air accumulates it distends the stomach and small intestines, and if they have not sufficient energy to overcome by their contractile power the resistance made by this valvular structure, inflammation takes place, and the animal dies. Carminative medicines increase for a short time the vital power of the stomach and small intestines, put a stop to the process by which air is generated, excite them to more vigorous contractions, and enable them to overcome the obstacle above described, and expel the confined air. It is in this way that Carminatives cure the flatulent colic. Sometimes, however, Carminatives prove ineffectual, not often from a want of power in the medicine, but from a circumstance that is not sufficiently attended to, that is, from an accumulation of excrement in the large intestines, especially the cæcum, by which the valvular aperture above noticed is so plugged up as to render all the efforts of the stomach ineffectual. The distension of the small intestines then causes inflammation, which soon terminates in death. The only remedy in such cases is clysters, and these if properly and seasonably administered, will always cure the disorder (see *Clysters*). The Carminatives usually employed are by far too strong; they often cure the disorder, but always increase the tendency to it by impairing the tone of the stomach. Large doses of turpentine and other essential oils are very injurious in this way, also pepper and other strong stimulants. I believe there is not a more effectual Carminative, and certainly not a more innocent one than diluted brandy, rum, or gin. The dose from four to six ounces, mixed with twelve ounces of water. Horses that have been accustomed to take cordials or beer can bear six ounces, with perhaps only eight or ten ounces of water, but those who have not been in the habit of taking such things will do better with only four ounces of spirit, and twelve of water. Daffy's Elixir is often employed for flatulent colic, but it is not so good a remedy as the spirit and water, and is liable to injure the stomach. It is nothing more than a compound tincture of Senna, and if made with old spirit, whether brandy, rum, or gin, there would be no objection to its use except the expence, for the spirit is the only useful part of it. If Daffy's Elixir, however, should be made as tinctures too often are, with a mixture of spirit of wine and water, though it cure the disease, it must injure the stomach, as the spirit is so loosely combined with the water that it separates in the stomach, and increases that state or condition on which the disorder depends.* (See vol. i.)

CARROTS are sometimes used as an article of diet, and may be given in moderate quantity, with great advantage, to horses that are thick winded, have coughs, or are disposed to inflammatory complaints, such as grease, inflamed eyes, &c. They appear to be easy of digestion, and very nutritious.

CASCARILLA BARK. An excellent tonic and stomachic; it is sometimes joined with Cinchona, Colombo, Gentian, or other bitters, and sometimes it is given with cordials. According to Dr. Paris, Cinchona, Cascarilla, and other medicines which contain tannin and the gallic acid, or, in other words, which strike a black colour with iron, decomposed the sulphates. According to this doctrine, Cascarilla would be what he terms an *incompatible* ingredient with the sulphates of iron, of copper, and of zinc. The dose of Cascarilla is one, two, or three drams.

---

* Flatulent colic is generally attended with a stoppage of urine, which is caused by the distended bowels pressing down the body of the bladder, at a time when there is probably only a moderate quantity of urine in it, below the brim of the pelvis, and in that way the animal is prevented from voiding his urine.

CASSIA. A bark, somewhat like cinnamon both in appearance and taste, but thicker and larger. There are some fine pieces of *Cassia* which so nearly resemble cinnamon, as not to be easily distinguishable from it, and are frequently sold for it in the shops. For every veterinary purpose, *cassia* is equal to cinnamon, provided it is well chosen: such parts should be selected as have a pleasant, sweetish taste, succeeded by one extremely hot and pungent: this is generally found in the thinner pieces, which are curled up like *cinnamon.*

Cassia is a strong aromatic stimulent, and an efficacious ingredient in *cordial* preparations. The dose is from one to two drams. An essential oil is obtained from cassia, which bears a high price, but is so excessively powerful, that two drops on a knob of sugar will impart a strong taste to half a pint of water.

CASSIA BUDS. These nearly resemble cassia in their taste and medical qualities, and may be used for the same purposes.

CASTOR. A peculiar animal substance, taken from the beaver: it has been extolled by some practitioners as an antispasmodic and sedative; while others have doubted its efficacy. It is very seldom used as a horse medicine; nor does it seem likely to be much employed, there being cheaper and more certain medicines of the same class. In old veterinary or farriery books castor is prescribed in spasmodic diseases, such as convulsions or locked-jaw. Gibson and Bartlet direct half an ounce to be given at a dose. Castor is brought from Russia and from Canada; the former is considered the best, but is now scarce.

CASTOR OIL. An useful laxative in cases where it is necessary to open the bowels, and at the same time avoid irritation; it is therefore extremely proper in fevers, accompanied with costiveness, particularly when there appears to be pain and irritation in the bowels.

The dose is from half a pint to a pint, or a pint and half.

It has been asserted that *castor oil* is a good remedy for worms: but I have seen it given in this case without effect. (See Anthelmintics, also vol. i.) It has been suggested that olive or linseed oil may be substituted for castor oil; perhaps they are inferior as laxatives, but so much cheaper that they ought to be fairly tried. (See Laxatives.) Castor oil is obtained from the seeds of the ricinus or palma christi by boiling and by expression. The former method was generally used till lately, and was performed by tying up the seeds in a bag, having previously taken off the bark and bruised them, and suspending the bag in boiling water till all the oil was extracted and rose to the surface, when it was skimmed off; but it is now more generally obtained by pressure like that of almonds or olives. The castor or ricinus seeds are a strong purgative. The best castor oil is made in England from cold blanched seeds with the eye taken out. It is said that the dark coloured castor oil, brought from the West Indies, is bleached or rendered colourless by some process in this country, and sold as cold drawn castor oil.

CATAPLASM. (See Poultice.)

CATECHU. Extract of Catechu, formerly named *terra Japonica* (Japan earth), is procured from the inner bark of a tree that grows plentifully in Hindostan, by boiling it, and afterwards evaporating the decoction. It has been extracted also from the areca nut in a similar manner. Pale catechu is generally in small square cakes of a pale, reddish brown colour, a bitterish and astringent taste, with a degree of sweetness, and inodorous. The dark coloured, which is in round masses, has a deep chocolate colour internally, with the hue of rusty iron on the outside; the texture is uniform, and the fracture resinous and shining. It is heavier than the pale, and has a more austere and bitter taste, but in other respects agrees with it; both are often much adulterated with sand and other impurities. On a chemical analysis it is found to consist principally of *tannin*. Catechu is the most valuable of the vegetable astringents, the dark coloured should be preferred, being the strongest or containing more *tannin* than the pale coloured. It is employed in diabetes and diarrhœa, especially in the diarrhœa of cattle. It is a good medicine for horses that have a constitutional weakness of the bowels, scouring upon moderate exercise, or upon drinking cold water. It may be given also as a tonic in conjunction with bark, bitters, aromatics, ginger, or with the mineral tonics, such as sulphate of copper, of iron, or of zinc. (See Tonics.) With finely powdered alum and hog's lard it may be tried as an anstringent ointment. (See Astringents.) The dose is from two to four or five drams. In bloody urine, brought on by strains or injuries of the kidneys, it has been given with good effect, joined with alum and sometimes with opium and cordials. In the *red water* of cows there would be danger in giving it *at first*, as that disease is often of an inflammatory nature, requiring bleeding and saline laxatives, such as castor oil and Epsom salts. (See vol. i. and iii.)

CATHARTICS. Medicines that cause purging. The preparations employed for this purpose are commonly termed physic. Previous to physicking a horse, he should be fed with bran mashes for two or three days, and have moderate but regular exercise, or be worked with moderation. He should be allowed only a moderate quantity of hay, especially if he has a voracious appetite, and if inclined to eat his litter he should be prevented by a muzzle, or by being tied up to the rack in the day-time, or what is still better, by having his litter removed during the day, and by applying the muzzle at night after he has eat his allowance of hay. If in low condition some oats may be mixed with the bran mashes; but eight to ten pounds of good hay is a sufficient allowance for a day and night. On the morning the physic is given neither hay nor mashes should be allowed, until four or five hours after it has been taken. Some practitioners, however, direct a small thin mash of bran only, to be given about an hour after, for the purpose of dissolving or mixing with the physic. This however is unnecessary, though supposed to render the effect milder and more expeditious; but this is not the case; physic should be given fasting. During the day the horse may have walking exercise for about half an hour, and once only, and be fed with bran mashes, and have the chill taken off from his water. Grooms generally consider exercise unnecessary or improper on the day the physic is given, and on the following day, when the medicine generally operates, they are apt to give too much exercise. But as soon as the purging has taken place in a sufficient degree, which is generally the case about the afternoon of the day after it is taken, exercise is unnecessary or improper; and should the purging continue or be found to be going on the following morning, that is the morning of the third day, including that on which the medicine was given, it should be restrained by gruel made of arrow-root or fine wheat flour, with which he should be drenched if he refuse to drink it. Should the purging continue after this, about half an ounce of tincture of opium may be given with a hornful of gruel.

Horses sometimes appear sick, and refuse their food after taking physic, either during the afternoon or evening of the same day, or the following morning. This is generally caused by a neglect of the preparation above directed, by the stomach being loaded at the time the physic is given, or by the horse feeding improperly too soon afterwards; and not unfrequently by the physic being *too strong*. When this sickness is observed, the horse should have walking exercise; and if it be on the same day the physic is taken, and the uneasiness is considerable, let a glyster be administered: nothing more is necessary. Should it continue, however, the following morning let him be again exercised, and have some water with the chill off; and if the purging does not come on, and he appears to make fruitless efforts to dung, let the clyster be repeated, which, with a repetition of the exercise, will generally produce the desired effect. A horse should be clothed and not exposed to rain or cold wind during the operation of physic; and when the operation has ceased, he should be gradually brought back to his usual diet and work. Aloes is the only purgative medicine that can be depended upon for horses, and though Socotrine aloes is generally considered by medical practitioners the mildest kind, and that which should be chosen, I have for many years used the Barbadoes aloes, and have found it equally safe and mild, and more effectual than the Socotrine, when given in a proper dose, and assisted by judicious management. (See Aloes.)

Gibson, Bracken, and other Veterinary Authors, have prescribed jalap and cream of tartar in their purging balls. It has been proved, however, that jalap has but little effect in the horse even in a large dose. (See Jalap.) And that cream of tartar, which was supposed to prevent griping by correcting the acrimony of the aloes, is absolutely useless. Whether the combination of aloes and jalap with calomel, or of aloes with scammony, gamboge, or elaterium, is more efficient than aloes alone, or aloes and calomel, in cleansing the alimentary canal from worms and other offensive matter, and of giving activity to the lacteals (see vol. i. Anatomy of the internal organs), has not, perhaps, been correctly ascertained. I am inclined to believe, however, that for this purpose a mixture of Barbadoes aloes, calomel, soap and ginger, is as effectual as any. The neutral salts, such as sulphate of soda, and sulphate of magnesia, (Glaubers and Epsom salts) are sometimes employed by veterinary practitioners, especially in France; but the large dose required to produce a purgative effect (seldom less than 12 oz. or 1lb.), and the difficulty and trouble in giving them, prevent their being much used in this country. When a horse can be brought to drink a weak solution of Epsom salts, suppose 1lb. to a large pail full of water, a diuretic effect is generally produced, and the dung a little softened; but when purging is necessary, nothing of the sort should be depended upon. Common culinary salt is much more useful, and when given in the manner prescribed by Mark-

ham, is an effectual remedy for botts. He directs the horse to be kept fasting for ten or twelve hours, then to take a quart of milk sweetened with honey, and about five minutes after from four to six ounces of salt in a quart of water. This will destroy and carry off the botts that may be in the stomach at any period of the year, but especially in September, when they are young and less vigorous than at any other period. Common salt is an excellent cathartic for cattle, and sometimes requires to be strengthened by three or four drams of aloes. The dose of common salt for cattle is the same as for the horse, that is from four to six ounces in one quart, or more of whey or water. Cathartics are a most important class of medicines, and of all cathartics Barbadoes aloes is the best. Diuretics may be more frequently required, but if we consider the purpose for which these two classes of medicine are given, it is difficult to say which is most important. Cathartics improve digestion and chylification, by cleansing the intestines and unloading the liver, and if the animal is afterwards properly fed, will improve his strength and condition in a remarkable degree. Diuretics carry off the excrementitious matter of the blood by the kidneys, and thereby produce a similar effect, but not in so essential or permanent a manner; for if the system of feeding, which rendered the blood impure be continued, it will soon return to its original state. Cathartics are always useful when the appetite and digestion are bad, and this is known by a voracious or depraved appetite, both for food and for water; rumbling of the bowels, and a frequent discharge of wind from the anus. This is the case in a remarkable degree with broken-winded horses, and generally in such as have chronic cough, or are crib-biters. Cathartics should not be given too strong or too frequently, as they might thereby weaken instead of strengthen the digestive organs, and produce the effect they were intended to remove. Cathartics should always be made with soap, in the following manner, and then if given upon an empty stomach, they will be carried off, and will not be dissolved until they get into the large bowels, where their effect is intended to be produced; that is carrying off all the excrementitious matter that may be lodged in them. When given in this way they never produce sickness or pain in the stomach, but always operate without pain or danger.

CATHARTIC BALL.

Barbadoes aloes powdered	from 5 dr. to 1 oz.
Hard soap	4 dr.
Ginger	1 dr.

Put these ingredients into a gallipot, and let it stand on the hob or a moderately hot plate, or in boiling water, and when the soap and aloes are melted, let the whole be well mixed and formed into a ball. This I consider the best cathartic ball that can be made, and if made in any quantity for keeping, which it is better to avoid, the addition of a little sallad oil will be useful. Opium is an useful addition to a cathartic ball for horses that are subject to flatulent colic, gripes, or fret.

Other formulæ for cathartics have been given in former editions, but they differ only from the above in containing some essential oil, and in being made by means of syrup; some of them contained also soda, but soap is preferable, and the formula I have now given is the best that can be employed. When wanted as an anthelmintic, a dram of calomel may be given the preceding night, or added to the ball. Stomachic purgatives are made by adding rhubarb, colombo, or cascarilla to a small dose of aloes; but I am inclined to believe that whenever the state of stomach and bowels is such as to require a cordial or warm cathartic, that opium is the best cordial that can be employed for the purpose.

Stomachics may be given, if required, after the operation of the cathartic. (See Stomachics.)

Horses are more easily purged in the moulting season than at other times, that is in April and in September. At these times the bowels are weak, and a small dose should be given.

CAUSTICS are substances that burn or destroy parts to which they are applied. The most powerful is the red-hot iron, or *actual cautery*, which is often employed in veterinary practice, to remove *spavins*, &c. (See Firing.) Many of the other caustics are possessed of great strength, and speedily destroy those parts to which they are applied: such are the pure alkalies, *potash* and *soda;* the *sulphuric* and *nitrous acids*, or a solution of *silver*, *quicksilver*, or *copper*, in *nitrous acid*. If a solid caustic is wanted, nothing is more convenient than the *lunar caustic* (*nitrate of silver.*) The milder caustics are more frequently useful than those we have mentioned; such as blue vitriol (*vitriolated or sulphate of copper*), red precipitate (*nitric oxide of mercury*), burnt alum, verdigris, &c.

The strong caustics are employed to destroy unhealthy or diseased parts, such as warts and other excrescences, cleansing foul ulcers and sinuses, so as to bring them to a healthy state, and curable by more simple applications. Caustics may be divided into liquid and solid, strong and mild. The mild caustics are called also escharotics, and are more useful than the stronger caustics, which are too violent in their action in many cases, and often require to be diluted with water, spirit, or unctuous substances, according to the nature of the case.

SOLID CAUSTICS, STRONG.

No. 1. The red-hot iron. (See Firing.)
No. 2. Pure potash with lime.
No. 3. Nitrate of silver, or lunar caustic.
No. 4. Nitrate of copper.

MILD CAUSTICS, SOLID.

No. 1. Acetate of copper, or distilled verdigris.
No. 2. Sulphate of copper, or blue vitriol.
No. 3. Red nitrated quicksilver, red precipitate, or nitric oxide of mercury.
No. 4. Burnt alum.
No. 5. Common verdigris.

Remark.—The strong caustics are generally sold in a convenient form for application; but the *mild* require to be finely powdered and sprinkled on the ulcer: they are sometimes mixed with digestive ointments to increase their power.

STRONG CAUSTICS, LIQUID.

No. 1. The sulphuric and nitrous acids, which are very powerful, and must be used cautiously: they may be diluted with different proportions of water, so as to be applicable to many purposes.

No. 2. Nitrous acid .... 1 oz.
Quicksilver. .... ½ oz.[*]

Place them in a large gallipot, or open phial, and take care to avoid the noxious fumes which arise. When the quicksilver is perfectly dissolved, and the mixture cold, it may be put into a smaller phial and corked.

Remark. This is a strong and efficacious caustic; it is a certain remedy for the foot-rot in sheep, and often effectual in canker of the horse's foot, provided these complaints are properly managed in other respects. It is sometimes mixed with melted hog's lard to form a strong *detergent* ointment, or diluted with water.

No. 3. Nitrous acid .. .. 1 oz.
Verdigris .... ¼ oz.—Mix.

This caustic is very little, if at all, inferior to the former, and applicable to the same purposes.

No. 4. Muriate of antimony, or butter of antimony.

No. 5. Muriate of quicksilver, or sublimate } 1 dr.
Muriated acid .... 2 dr.

Remark. This is a very powerful caustic, and always requires dilution.

---

[*] Red precipitate or nitric oxide of mercury may be substituted for quicksilver.

MILD CAUSTICS, LIQUID.

No. 1. Solution of blue vitrol.
No. 2. Any of the stronger caustics, except butter of antimony, diluted with an equal quantity, or more, of water.
No. 3. Muriatic acid.
No. 4. Muriate of iron.

CAYENNE PEPPER. See Capsicum.

CENTAURY. This herb is a weak bitter, and of no use in veterinary practice.

CERATE. A term given to certain ointments or salves, in which *wax* is is an ingredient.

CERUSS, or *White Lead*. This is sometimes used in ulceration of the heels, when the discharge is thin and acrimonious.

It is generally made into an ointment with hog's lard and oil; but perhaps would be found more useful if merely sprinkled on the part in fine powder. (See Lead.)

CHALK should be finely levigated or prepared, as it is termed, before it is given. It is sold by druggists in this state; and is a good remedy in diarrhœa, if joined with opium and ginger, or other cordials.

The dose is about one ounce. (See Astringents.)

CHALYBEATES. Preparations of steel or iron. (See Iron.)

CHAMOMILE. See Camomile.

CHARCOAL. A charcoal poultice has been recommended as an application to the heels when affected with grease, with a view, perhaps, to destroy the offensive smell with which that disease is accompanied.

CHARGES. Adhesive plasters which are softened or liquified in a ladle by a gentle heat, and then applied to the legs, from the knee and hock joints to the foot, as a remedy for windgalls and old lamenesses, arising from strains or hard work.

As soon as the plaster is applied, the part is covered with short tow, and the horse sent to grass.

A Charge.

No. 1.	Burgundy pitch	4 oz.
	Barbadoes tar	2 oz.
	Bees-wax	3 oz.
	Red lead	4 oz.

The three first are to be melted together, and then the latter is to be added. The mixture is to be constantly stirred until sufficiently cold to be applied; and if it prove too thick when cold, it may be softened with a little oil or lard.

Farriers generally mix Dragon's Blood (as it is commonly called), from an idea that it has a strengthening quality; others recommend bole armenic. It appears, however, that charges act as a bandage only, compressing equally, and for a considerable time, the joints, tendons, &c.

CHEWING BALLS, or *Masticatories.* These are composed of the wood of the bay and juniper tree, assa fœtida, liver of antimony, and pellitory of Spain.

CINCHONA. See Bark.

CINNABAR. A heavy mineral of a dark red colour, sometimes prepared artificially. It is composed of quicksilver and sulphur, and has been employed as an alterative in obstinate coughs and thickness of wind, in doses of half an ounce daily. Cinnabar is the least active of the mercurials.

CINNAMON. This well-known spice is a powerful stimulant, and an excellent cordial: its high price, however, prevents its being used much in cordial preparations; so that when good cassia can be procured, it may be on all occasions substituted for it in veterinary practice. (See Cassia.)

CLOVES. A stimulant of considerable strength, but seldom employed in veterinary medicine, on account of its high price. The essential oil of cloves is sometimes used, in the dose of twenty or thirty drops, in cordial preparations, or in purgative medicine, to prevent sickness or griping. It is an excellant cordial.

CLYSTER or GLYSTER. This useful remedy is not employed as often as it ought to be, and is seldom employed properly or effectually. In flatulent colic it is essentially useful, and it is from this circumstance, being too little known, or not attended to, that flatulent colic sometimes terminates in inflammation of the bowels and death. (See Carminatives.) In suppression or retention of urine, or in difficulty of staling, a clyster is the best remedy that can be employed. In short there is scarcely a disease, to which horses are liable, in which clysters may not be advantageously employed, either as a principal remedy, or as an auxiliary to others. The clyster syringes commonly employed are worse than useless, because they sometimes prevent a clyster being given when it is absolutely necessary, especially in flatulent colic, as I have explained under the article Carminatives. The clyster pipe and bladder is the only effectual apparatus I have seen. The pipe should be one inch in bore, and fifteen inches in length. The quantity of liquid employed should be five or six quarts, and consist only of warm water, with a pound of salt dissolved in it. There is sometimes difficulty found in introducing the pipe, generally from hard excrement in the straight gut; sometimes, however, from the bladder being distended with urine. In such cases patience and care are necessary to exhibit the clyster effectually, and it may almost always be accomplished without raking or drawing out the hard excrement with the hand.* The simple emollient clyster should be warm water only. The anodyne or opiate clyster should be composed of three or four ounces of tincture of opium in two quarts of warm water. Gibson gave half an ounce of solid opium dissolved in water, as a clyster to a horse in locked jaw, with success. Nourishing clysters are composed of arrow-root or wheat flour gruel with sugar, or broth thickened with flour. Tincture of opium is an useful addition to such clysters, especially in locked jaw.

COLOCYNTH, COLOQUINTIDA, or *Bitter Apple*. A violent purgative in the human system, but said to be quite inert in the horse.

COLLYRIUM, or *Eye-Water*. (See Eye-Water.)

COLOMBO, the root. A good stomachic bitter, much used in human medicine; and though rarely employed in veterinary practice, seems to be worth a trial in cases of indigestion and flatulency.

The dose is three or four drams or more: it would perhaps be more effectual if joined with ginger or cassia. (See Tonics and Stomachics.)

COLTSFOOT. Though this plant was

once considered as an useful remedy in coughs, it is now totally disregarded.

CONTRAYERVA. The root is considered by medical practitioners as a mild diaphoretic and cordial, but it is never used in veterinary practice.

COPPER. This metal is a component part of blue vitriol (*sulphate of copper*) and verdigris, two valuable preparations. (See Blue Vitriol and Verdigris.)

COPPERAS. A term formerly employed, and still used in the arts, for sulphate of iron, which has also been named salt of steel (*sal martis*), when purified, and vitriolated iron. Sulphate of Zinc has also been named white copperas, but more commonly white vitriol.

CORAL, white and red. These act only as *absorbents*, though formerly accounted *anthelmintic*.

CORDIALS. There is no medicine more frequently employed than cordials, and there are none, perhaps, more frequently required; their effect, it is well known, is only temporary, but it is not sufficiently known that, notwithstanding their apparent good effect, they often increase the disorder they are intended to remove, by impairing the vital power of the stomach, and rendering their use more and more necessary. Since cordials are often required, it is proper to inquire what has rendered them so necessary, we shall then find that it is *improper feeding* and immoderate work. With respect to feeding, there is only one thing that does a horse more injury than an immoderate allowance of hay, and, that is, *bad hay*. The greater part of the hay that is made, is of this description, in the vicinity of Mendip, and is the cause of incalculable mischief, especially to horned cattle, being the cause of their most serious diseases. The injury is not so manifest in horses, nor is it so quickly produced, especially when they have a liberal or proper allowance of oats. In that case, provided the stomach is healthy, they will not eat much bad hay, though they will eat of good hay, even then, more than is consistent with health. By eating an improper quantity of hay, thirst is produced, and the water the animal drinks is necessary to render the quantity of hay he takes digestible. A continuance of this practice gradually induces a morbid or depraved appetite, and even a voracious one, so that the animal, when limited in hay, will eat even his litter and drink the filthiest water. I have known a horse, in this state, drink from a pail of white wash, and injure his mouth and throat considerably by it. The appetite for drink is such that a horse will sometimes drink two or three pails full of water at a time. This state of stomach is so gradually induced, that the cause has been generally overlooked; and when some of its conspicuous effects take place, among which are chronic cough, various degrees of asthma or broken wind, worms, &c. they are commonly attributed to other causes. If an improper allowance of good hay does so much mischief, much worse effects will of course result from the use of bad hay, especially when little or no grain is allowed. *Stomach staggers* is one of the numerous diseases thus produced. It has been remarked, and I believe truly, that the bad quality of hay depends upon its being cut too late, for the purpose of saving the seed, or of getting as large a quantity as possible without any regard to the quality. Such hay, even if well saved, contains scarcely any nutriment, and therefore gives fruitless employment to the digestive power of the stomach. If this subject be considered in an economical point of view, it is one of great importance. A stomach in the morbid state, which this kind of food produces, becomes incapable of digesting even oats and beans, unless they are perfectly masticated; but the appetite such horses have often leads them to swallow some portion of their allowance unmasticated, and this, after exciting ineffectual efforts in the stomach to digest it, passes through the bowels unchanged. If the horse's stomach be preserved in a healthy state, and this may be done by giving him a proper quantity of wholesome food, digestion and chylification are as they should be, and pure blood is the result. But, in the morbid state of this organ, digestion is imperfect, the chyle is crude, and the blood becomes impure, or loaded with the excrementitious matter, in consequence. Hence arise two kinds of diseases. The efforts made by the stomach to digest the unwholesome food it is supplied with, causes an exhaustion of its vital power, or a depression of vital energy, in which the whole body, and especially the muscular system, participates. Hence arise flatulent colic and stomach staggers; the latter generally an incurable disorder; and the former, from being improperly treated, often terminating also fatally. The diseases arising from impure blood are many, and of a formidable nature; of this kind mesenteric consumption, mange, and worms, not only in the bowels, but also in various parts of the body, are derived from this source. Since then this improper, and I may truly add, destructive method of feeding is still general, cordials and diuretics form two useful classes of medicine; the former giving temporary energy to the stomach; and the latter carrying off the excrementitious matter of the blood by the kidneys. In the human body, the perspiratory organ, the skin, is a material object of consideration, but it is not so in the horse the impure state of the blood originates, as I have before noticed. Having gone thus far, it may be expected that I also name the daily allowance of food necessary for a horse in moderate and regular work. I am of opinion that such a horse's daily allowance should be one peck of good oats and eight pounds of good hay, that is, hay cut before the seeds are ripe, containing what is called good herbage, of a pleasant or rather fragrant smell, colour inclining to green, well saved, and not more than one year old, or if older, taken from a large well pressed mow. His daily allowance should be divided into three portions, that is, two pounds of hay, and a quarter of a peck of oats in the morning, the same quantity at noon, and the remainder at night. The hay should be always dipped in water, which will facilitate mastication and digestion in a considerable degree; the oats also may be mixed with a little water. The allowance of water should be divided into three parts, and should not exceed three gallons. The water should be given after the food, for if a horse wants appetite for food, it is certain that he does not want any, and that his stomach is disordered, therefore his appetite must be restored either by abstinence, by a cordial, or by any other medicine that may appear suitable to the occasion: bleeding in young horses may be necessary, but most commonly it is the digestive organ itself that requires attention. The common practice of giving cordials in the form of balls, however convenient it may appear, is wrong and should be entirely given up. A drench is the only form in which it can produce the proper effect. Good sound strong ale or beer is the best cordial that can be given: no addition is necessary. When this cordial, however, is often repeated the stomach becomes accustomed to the stimulus, and a gradually increased dose is required to produce the desired effect. At length it becomes almost inert; and if the horse continues in work, which is seldom the case, brandy must be resorted to, and after that opium. The quantity of ale for a horse unaccustomed to it, should not exceed half a pint; it should not be given mixed with oats, but when the oats are necessary they should be given a few minutes after. On emergencies good gruel mixed with ale may be given. When more permanent effects are expected than cordials are capable of producing, stomachics or tonics, with a carefully regulated diet, are usually recommended with rest, or only voluntary or walking exercise. But in summer a run at grass should be preferred, for that, indeed, is the only effectual remedy. I hope the reader will not think I have been dwelling too long on this subject. The advice I have given appears to me important, and will therefore be repeated whenever an opportunity offers; hoping that the proprietors of horſes will at length be induced to feed horses properly, and, what is not less important, work them with moderation. In doing this they will promote their own interest, and render cordials and all other medicines unnecessary.

CORIANDER SEED. A weak aromatic stimulant, seldom used in veterinary medicine.

COWHAGE, or *Cowitch*. A pod produced by a plant growing in the West-India Islands, and other warm climates, where it proves very troublesome to cattle and other domestic animals, on account of the spiculæ which grow upon the surface of the pods: these, when applied to the skin, excite a painful kind of itching. The *down* is said to be a good remedy for worms in the human body. I have given it to a horse in a dose of half an ounce, as a worm medicine; but it did not produce the slightest effect.

CREAM OF TARTAR. (See Acid, Tartareous.)

CRETA. (See Chalk.)

CROCUS. (See Saffron.)

CUBEBS. A species of pepper.

CUCUMBER, wild, or *Elaterium.* The fecula or mucilaginous part of the fruit is a violent purgative and emetic in the human subject, but has not been tried in the horse.*

CUMMIN, the seed. A weak stimulant; but its essential oil is an useful cordial and carminative, in doses from half a dram to one dram.

CUSPARIA BARK. Angustura Bark; a good tonic and stomachic: the dose two drams or more, with ginger or aromatic powder.

DAFFY'S ELIXIR. A popular quack medicine, often given to horses as a remedy for flatulent colic, gripes, or fret, which it sometimes cures, being composed of proof spirit in which senna, jalap, caraway seeds and ginger, have been infused. But it is by no means an eligible medicine, and should never be employed for the purpose. (See vol. i. article Colic.) When the remedies prescribed for that disorder cannot be obtained, a pint of warm beer with grated ginger, and a glass of gin or other spirit, will be found a cheaper and a more effectual remedy than Daffy's Elixir; or, what is still more effectual, a pint of warm brandy and water, from four to six ounces of brandy to twelve ounces of water. Rum or gin may answer the same purpose diluted with water. (See *Carminatives.*)

---

* I have lately tried this medicine in doses from half a dram to one dram and a half. It produced no visible effect.

DANDELION. The root is by medical authors considered as a deobstruent, but is not employed in veterinary practice.

DEADLY NIGHTSHADE. (See *Belladonna.*)

DECOCTIONS are made by boiling any vegetables in water until their virtues are extracted. For making decoctions the substances employed must be powdered, sliced, or cut up in small parts. The vessel in which they are made should be covered, and when the substance contains any aromatic or volatile principle, the boiling should be continued only a short time. Decoctions should be strained while hot, as some of them, Peruvian bark, for example, deposits some active and useful matter in cooling. Decoctions soon ferment, and are spoiled by keeping; they should be used therefore soon after they are made.

DECOCTION OF ALTHEA, or *Marshmallows*, is useful in fevers as a vehicle for nitre or other medicine; also as an emollient clyster and fomentation.

DECOCTION OF CAMOMILE. COMPOUND.

Camomile flowers, dried	1 oz.

Caraway seeds, bruised	1½ oz.
Ginger, bruised	1½ oz.
Water	1 qt.

Boil for ten or fifteen minutes; a good stomachic drench.

Decoction of Oak Bark.

Oak bark, bruised	2 oz.
Water	1 qt.

Boil gently for ten minutes; a good vehicle for tonic medicine.

Decoction for Fomentation

Is made by boiling bay leaves, camomile flowers, wormwood, and southernwood in a sufficient quantity of water.

Decoction of Poppyheads

Is made by boiling the dried capsules, or heads of the white poppy, without the seeds, and broken up in small parts, in a sufficient quantity of water; *i. e.* about two or three ounces to a quart of water. This decoction is used as an anodyne fomentation.

Decoction of Barley.

Barley water is made by boiling pearl barley in water. This may be used in fevers, either alone, or as a vehicle for nitre or other medicine. Various other decoctions are occasionally employed, and sometimes preferred on account of their cheapness, to more efficacious, but more expensive medicines: but it must be recollected that some vegetables, such as peppermint, pennyroyal, &c. have their useful properties dissipated by much boiling, and should therefore be only simmered for a few minutes, or only infused, as it is termed. (See *Infusions.*) It is a common practice with cattle doctors to boil their drenches in ale, by which the spirit of the ale, and sometimes the essential parts of the other ingredients, are in some degree evaporated. (See *Drenches.*)

DEER'S SUET, or *Grease.* This is sometimes prescribed by old authors, but does not differ from mutton suet.

DEMULCENTS. Medicines which have the power of diminishing the effect of acrimonious or stimulating substances upon the sensible parts of the body. There are two sorts of demulcents: the one, possessing an oily or mucilaginous quality, sheathes the sensible part, and thereby defends it from the action of the stimulus; the other, being a watery fluid, dilutes the stimulus, and diminishes in a certain degree its power. Among the former may be reckoned, gum arabic, gum tragacanth, and marshmallow, with various oils: the latter consists principally of water.*

---

* DEMULCENTS. Medicines that protect the stomach, bowels, or other parts, from the acrimony of the

DEOBSTRUENTS. Medicines that remove obstructions. This class of medicines has been omitted by Mr. Murray and other modern writers on the Materia Medica.

DEPILATORY. An application that removes the hair.

DEPURATION. The purification of vegetable juices, &c. the same meaning as clarification and despumation. The process generally consists in boiling and taking off the scum that rises on the surface; to promote this, the white of egg is sometimes employed. Some juices are depurated merely by being at rest, such as the juice of hemlock, when the foul parts gradually subside; others are purified by filtration or straining.

DESICCATIVES. Medicines, or rather applications, that dry up ulcers or running sores. The term is nearly obsolete.

DETERGENTS. A term employed in surgery for those applications which have the power of cleansing foul ulcers, and inducing a dispo-

---

fluids to which they are exposed; such medicines are of an oily or mucilaginous nature, such as lint or flax-seed, quince-seed, marshmallows root, gum, &c. These are supposed to act not only by a direct application to the stomach and bowels, but also by being absorbed into the circulation, and through that medium on the lungs, kidneys, and bladder.

sition to heal. They consist of caustics or escharotics diluted or mixed with water, unctuous substances, essential oils, or absorbent powders.

DIACHYLON. Litharge or lead plaster, is made by boiling together olive oil nine parts, litharge five parts, water two parts, over a slow fire and constantly stirring, until the oil and the litharge unite, and acquire the consistence of plaster. The water is intended to prevent burning or discolouration of the plaster, and must be replaced as it evaporates. Diachylon is an ingredient in sticking plaster, and charges, and is useful when spread on leather for defending a tender part from pressure.

DIACODION, OR DIACODIUM. A syrup made from a decoction of the heads of white poppies, or more readily by dissolving the extract of white poppies in water, and the forming it into a syrup by the addition of a sufficient quantity of sugar.

DIALTHÆA. *Marshmallows Ointment.* An ointment made from marshmallows root, fenugreek seeds, palm oil, linseed oil, and resin. Sometimes lard and turpentine are added.

DIAGRIDIUM. A powder composed of scammony and jalap.

DIASCORDIUM, an astringent electuary,

composed of bole armenic four ounces; scordium, or water germander, two ounces; cinnamon one ounce and a half; strained storax, tormentil, bistort, gentian roots, dittany of crete leaves, galbanum, gum arabic, and red rose leaves, of each one ounce; long pepper and ginger, of each half an ounce: strained opium three drams. These are to be dried, powdered, and sifted, and mixed with syrup of white poppies, three pounds, into an electuary. This electuary is sometimes given in the diarrhœa of cattle. The dose one or two ounces.

DIAPENTE. A compound powder much used by farriers, as a tonic, or stomachic. It is composed of gentian root, bay berries, bay leaves, birthwort, myrrh, and shavings of ivory, of each equal parts: the last article, as well as the myrrh, are now generally omitted. This powder is very inferior to those formulæ or receipts which may be found in our Pharmacopœia. (Art. Tonics and Stomachics.) Diapente is sometimes coloured with bole armenic.

DIAPHORETICS. Medicines that increase the natural discharge by the skin; which, when they act in so considerable a degree as to occasion sweating, are termed *sudorifics*.

It is extremely difficult to produce any visible effect upon the horse's skin by means of medicine alone; but when it is assisted by proper exercise and warm clothing, we can generally give a fine glossy appearance to the coat, though it is very difficult to produce sensible perspiration, unless it be by violent exercise and immoderately warm clothing. The most effectual diaphoretics in the horse, are medicines of the hot stimulating kind, combined with antimonial preparations and opium: these, however, cannot be employed with propriety in fevers, which are generally an effect of internal inflammation; they are useful only when horses are hide-bound, have a rough dry coat, and appear in a state of debility. The effects of this class of medicines are so very uncertain in the horse, and so rarely succeed unless assisted by exercise, that it seems probable that exercise, a proper diet, and good grooming, form the only effectual Diaphoretic. (See vol. i., article Fevers; see also Alteratives.)

Emetic tartar, and other preparations of antimony, Minderus's spirit, and camphor, are the diaphoretics which are employed in febrile complaints. (See Febrifuges.)

DIET. Nothing tends more to the preservation of the horse's health, than proper management with respect to his diet; in the regulation of which, it is necessary to consider the exertion or labour that is required from him.

It is a mistaken notion, that horses possess the highest degree of strength, of which they are capable, while running at grass, in a state of nature; for there can be no doubt that the natural strength might be considerably augmented by high feeding and proportionate exercise, provided it is done gradually.

When a horse, however, is kept upon a full diet, and not allowed sufficient exercise, many dangerous diseases are engendered: to this cause may be attributed the frequency of his inflammatory complaints, and his most dangerous fevers may often be traced to this source; hence also originate swellings of the legs, grease, cough, inflamed eyes, and many other evils.

If a horse's work is moderate, his diet should be so likewise; but when his work is irregular, that is, when he is employed only once or twice a week, and then in hunting, or some violent and long-continued exercise, his diet must be such as to render him at all times adequate to his work: above all things, regular exercise in the intermediate days is indispensably requisite.

Horses that work hard, and constantly, should always be allowed a moderate quantity of beans with their oats; but on no occasion is barley a proper article of diet.*

This subject will be found more fully treated of in the first volume.

DIGESTIVES. Medicines which promote suppuration in ulcers, and cause them to discharge a white healthy matter. This term is commonly applied to ointments and other preparations which improve the state or condition of ulcers or sores, and cause them to discharge good matter. Medicines that promote the digestion of food are named tonics, stomachics, and cordials.

Digestive Ointment.

No. 1.	Hogs lard and strained turpentine, of each	4 oz.
	Verdigris	1 oz. Mix.
No. 2.	Hogs lard and Venice turpentine, of each	4 oz.
	Sulphate of copper (blue vitriol) finely powdered	1 oz. Mix.

---

* It is probable that barley may, by proper management, be given to horses without inconvenience. The stomach should be gradually brought to it; and to render it more easy of digestion, it should be coarsely ground, or merely broken, and mixed with an equal quantity of bran. (See Cordials and Carminatives.)

No. 3. Ointment of yellow rosin 4 oz.
Oil of turpentine...... 1 oz.
Nitric oxide of mercury (red precipitate,) finely powdered 1 oz. Mix.

No. 4. Ointment of nitrated quicksilver 4 oz.
Oil of turpentine.........1 oz. Mix.

(See Caustics and Escharotics.)

DIGITALIS. (See Fox-Glove.)

DILL, the seed, aromatic and carminative in a moderate degree, not unlike caraways, but weaker.

DILUENTS. Weak liquids employed as a common drink, such as barley-water, bran-water, &c. supposed to cool and dilute the blood in fevers, and inflammatory complaints.

DITTANY OF CRETE. The essential oil of this plant resembles that of origanum, and may be employed for the same purposes. (See Origanum.)

DIURETICS. Medicines that increase the secretion of urine; an effect more readily produced in the horse than in the human body. There is a great variety of medicines that act as diuretics: the principal are, the various kinds of turpentine, balsam, soap, the fixed alkalies, nitre, &c.

Diuretics are much used in veterinary practice, particularly in diffused swellings of the legs or other parts, and grease: when given in moderate doses, they may be continued for several days; and a horse may work without danger during their operation. The diuretic alterative in our Pharmacopœia is an excellent medicine for horses that are subject to swelling of the legs, and in slight cases of grease: but in more violent complaints we must employ more active remedies, these being adapted only to mild cases which do not prevent a horse from working. However paradoxical it may appear, there is truth in the assertion that diuretics are among the most useful, and likewise the most mischievous medicines, that are employed for horses. They are extremely useful in carrying off the impurities and superfluous serum from the blood, thereby producing the best effects in many diseases; but, unfortunately, while diuretics are given weekly, and almost daily for this purpose, no attention is paid to the source from which those impurities are derived. That is, a morbid digestion and chylification, originating from, kept up, and gradually augmented, by unwholesome food, or an improper quantity even of good hay. (See Cordials.)

Horses that have good appetites will take a *diuretic in the form of powder with their food,* and this form should then be preferred.

DIURETIC POWDER.

Powdered rosin and nitre, of each 4 dr.

Mix for one dose, and let it be repeated daily, or twice a day, if necessary, until a sufficient effect is produced.

DIURETIC BALL.

Hard soap and common turpentine, of each 4 dr.

Powdered caraway seeds enough to form the ball. Mix for one dose.

CORDIAL DIURETIC BALL.

Hard soap and common turpentine, of each	4 dr.
Ginger	1 dr.
Opium	½ dr.

Powdered caraways enough to form the ball. Diuretics should not be kept to become hard, as they often are, but be given in rather a soft state, and recently made. Diuretics should never be so given as to operate while a horse is in work, as he may thereby be prevented from staling when he has occasion; from neglecting this precaution, and from their frequent and immoderate use, arise those mischievous effects before alluded to. The kidneys are often materially injured by them as well as the bladder.

DRAGON'S BLOOD. A resinous substance of a dark red colour, which, when *pure*, is entirely soluble in spirits of wine. Dragon's Blood was formerly employed as an astringent and styptic, in fluxes and internal bleedings; but modern practitioners scarcely ever use it. It is still employed by farriers, in the complaint of horned cattle, which they term *red water*, or bloody urine, but without effect; nor is there any disease of the horse in which it is likely to be useful.

DRASTIC. A term applied to purgative medicines that are violent in their action.

DRAUGHTS, or *Drafts*. (See Drench.)

DRENCH. A medicine in a liquid form. This is an inconvenient method of giving medicine to horses, some part of the dose being generally wasted. It is preferable, however, on many occasions, to every other form, on account of the medicine acting in much less time than in a solid form: in flatulent colic, or gripes, for example, where the symptoms are extremely urgent and alarming, a proper *drench* will soon relieve the animal, while a *ball*, unless soft and very soluble, would not produce any effect. Farriers commonly compose their drenches with ale, whatever the qualities of the other medicine may be, which is often improper, since the properties of the liquid should always correspond with the virtues of the other ingredients. *Cordial drenches*, therefore, may with propriety be made with ale, but those of a contrary tendency should be mixed with gruel, or water.

The best instrument for giving drenches is the horn of an ox; the opening being cut obliquely in the form of a spout. Bottles are sometimes used on an emergency to give drenches; but they are attended with danger, and should be handled cautiously. In giving a drench, the horse's tongue should be held with the left hand; and when the head is sufficiently elevated, the medicine is to be carefully poured into the throat, immediately letting go the tongue, while the head is kept up until the drench be swallowed. Drenches are very seldom given with dexterity, and great part of the medicine is sometimes wasted. Every groom should learn to give them with facility, and always keep a proper instrument in the stable. In giving a drench, the head should not be kept so high as it generally is, nor should the throat be pressed or rubbed, as it often is, with a view to make the horse swallow, as it is apt to excite coughing. In severe colds or strangles, there is often some degree of soreness or inflammation of the throat by which swallowing is rendered difficult and painful. In such cases no attempt should be made to give either a drench or a ball, as the complaint would be increased by it; and if at any time a horse happens to cough or appear distressed while taking a drench, his head should be immediately let down. Hot stimulating medicines, or such as are very nauseous, are better given in the form of balls than drenches. Drenches should always be given with as much gentleness as possible; the horn may generally be introduced with ease, merely by pressing down the tongue with the fingers of the left hand, instead of dragging it out, as is commonly done. A small quantity only of the liquid should be given at once; about six or eight ounces, or even less, when tincture of opium or any powerful medicine is given; and it is of importance to be accurate in the dose, and not give either more or less than a certain quantity.

In locked-jaw it is very difficult to give a drench, unless a small horn is kept for the purpose, and even then a good deal of dexterity and perseverance are often required to effect it. In some cases the jaws are so completely closed, and the muscles of deglutition so affected, that a drench cannot be given; and then the only method of conveying the medicine into the body is in the form of clyster. (See Clyster.)

DRESSING. An operation of some importance in the management of horses, and consists in currying, brushing, and wisping them, when kept in the stable. This is done not merely with a view of removing the dust that may be collected on the coat, but to keep up a healthy degree of action in the perspiratory vessels or pores of the skin. When this is neglected or improperly done, the perspirable matter hardens or thickens, and remains about the roots of the hair, and has the appearance of a whitish dust or small scales, which often causes an itching, and makes the skin feel dry, and the coat appear coarse or wiry, instead of being soft and shining, as it is in a horse that is properly dressed or groomed. Horses that are not properly exercised have the more occasion for good dressing; and the operation is more easily and more effectually performed when a horse has been previously exercised until he perspires moderately.

EARTH. Horses at camp or grass are sometimes disposed to eat considerable quantities of earth: this should always be prevented, if possible, as it sometimes accumulates, and forms large balls in the intestines, which generally destroy the animal. Horses employed in mills for grinding have been often destroyed in this way. (See Absorbents.)

EGGS. These have been recommended for the improvement of a horse's wind; but they certainly do not possess any quality of that kind. They are also used for the purpose of mixing oils, and balsams, with water.

EGYPTIACUM. Linimentum Æruginis. Liniment of verdigris. A preparation made by boiling together five ounces powdered verdigris, one pound of honey, and seven ounces of vinegar, until they are incorporated. This is a good remedy for thrushes or diseased frogs.

ELATERIUM. This preparation of the wild cucumber acts on the human body as a most violent cathartic, and is seldom given in larger doses than one grain. I gave a healthy horse, that I purchased for the purpose of making experiments, half a dram, or thirty grains, at one dose, which did not produce the slightest effect: it did not even diminish the appetite, or move the bowels or kidneys. After an interval of twenty-four hours, I gave the same horse one dram and a half, or ninety grains, which proved equally inert.

ELDER. The leaves and blossoms are employed: the former in the preparation of an ointment and oil of a green colour, and of little or no use; the latter is used in making a white ointment, formerly recommended in inflammatory affections of the skin, &c., but not more efficacious than simple fat, or lard. There is also a distilled water made from it, which is often employed in the composition of eye-waters, but does not appear to possess any medical qualities that do not exist in simple or distilled water.

ELECAMPANE. The root of this plant is a weak aromatic stimulant, and formerly recommended in coughs, to promote expectoration: farriers use it for the same purpose; but, as we have many medicines of this kind of greater efficacy, it hardly deserves notice.

ELECTUARY OF SENNA, or *Lenitive Electuary*. This is an useful laxative in the human body; but, though recommended for the same purpose in the horse by writers on farriery, is certainly too weak to produce any effect, though given in the dose of a pound. (See Senna.)

ELEMI GUM. A resinous substance, sometimes employed in the composition of digestive ointments.

ELIXIR, PAREGORIC. A preparation of camphor and opium, but in too dilute a state to be adapted to veterinary practice.

EMBROCATIONS. External applications in a liquid form that are rubbed on a diseased part, as in strains and indolent swellings, and as an auxiliary in internal inflammation. They are of a stimulating nature, and are greatly assisted by friction. Of this kind are opodeldoc, soap liniment, &c.

MUSTARD EMBROCATION,

For inflammation of the lungs.

Flour of mustard	4 oz.
Liquid Ammonia	1½ oz.
Oil of turpentine	1 oz.

Water, a sufficient quantity to bring it to the consistence of cream.

Embrocations for hard indolent tumours.

No. 1.	Olive oil	4 oz.
	Camphor	4 dr.—Mix.
No. 2.	Mercurial ointment	2 oz.
	Olive oil and camphor, of each	2 dr.

Embrocations of a more stimulating kind are sometimes employed in swellings of the joints, old strains or other local affections, such as soap liniment with liquid ammonia, olive oil, oil of turpentine, and liquid ammonia, but blisters in such cases are generally more effectual.

Embrocations are often improperly employed, as in recent strains, or inflamed tumours, and other cases where cooling applications are required. Both strains and bruises are, at first, attended with a degree of inflammation, proportionate to the violence of the injury, and the susceptibility of the injured part; therefore they require, at first, such treatment as is calculated to subdue inflammation, that is, bleeding and purging with a suitable diet, and in strains, *rest*. The local or topical remedies in the inflammatory stage are fomentations, poultices, or cooling lotions. When the skin is much inflamed, as in recent bruises, the cooling lotion is an eligible application; but when the injured part is deeply seated, or rather unconnected with the skin, which is often the case in strains, fomentations of hot vinegar, or the above embrocations, after a short time, may be employed with advantage. In strains of the back sinews, a bandage kept constantly wet with diluted vinegar has often done much good: but in these cases also bleeding and purging, immediately after their occurrence, are an essential part of the treatment. (See Vol. i.)

EMETICS. Medicines that excite vomiting. It is very generally believed that horses are incapable of vomiting: I have met with one instance, however, where it occurred spontaneously, and was soon after succeeded by purging.

Medicines that are considered as the most violent emetics in the human system, are generally inert in the horse. A remarkable example of this may be noticed in white vitriol (*sulphate of zinc*), of which a horse has taken twelve ounces at a dose, without much effect. This experiment has not, I believe, been repeated, and it is desirable that it never should be repeated, or any experiments of a similar kind, as no advantage can possibly result from them, while much pain may be endured by the unfortunate animal, who is subjected to them unperceived by the practitioner or his assistants. It was asserted, at one time, that vomiting may be produced by inserting hellebore under the skin; this experiment was said to have been made at the Veterinary College of Copenhagen, but it does not appear to have succeeded with other practitioners. (See Hellebore.)

In a work on hydrophobia, by Dr. R. Pearson, of Cold-field, near Birmingham, in which he suggests the propriety of injecting medicinal substances into a vein, when exhibition by the mouth or clysterwise is impracticable, it is asserted that " this is frequently practised upon diseased horses at the Veterinary College of Copenhagen." This, probably, is the new method of treating locked jaw, hinted at by Mr. Sewel (see Preface to vol. i. 12th Edition), and is worth a trial, when medicine cannot be given by the mouth, and opiate clysters have proved ineffectual; and if, as they state, hellebore, when applied under the skin, is absorbed, and causes sickness, why may not a solution of opium be also absorbed when applied in a similar manner? • It is surely worth a trial in locked jaw. Ipecacuana and emetic tartar have no emetic power in the horse, and though hellebore appears to excite a painful sensation in the stomach, it has not, even in the dose of one ounce, caused vomiting. (See vol. i. Structure and Functions of the internal Organs.)

EMETIC TARTAR, or *Tartarized Antimony*. A preparation of antimony (see Antimony) and cream of tartar (see Acid, Tartareous). This is a violent emetic in the human subject, even in the quantity of one or two grains: but in more minute doses it is used as a febrifuge.)

In the horse it is a very safe medicine, and useful in fevers: it is generally given in doses of two drams, which may be repeated every day, or even twice a day, should the case require it: when the bowels are affected by it, a small quantity of opium may be added: many practitioners join with it camphor and opium, or camphor and nitre, both of which are often highly useful. Emetic tartar seems to be the best of the antimonial preparations, though others are occasionally preferred: but there is some difficulty in deciding this point; for all the preparations of antimony have so little activity in the system of the horse, that their effects are not often perceptible: we know them to be useful, however, from their frequently subduing or mitigating the disease for which they are employed. When antimonials are given to remove surfeit, or relax the skin, they may be materially assisted by exercise and moderately warm clothing.

Fevers in the horse are always occasioned by internal inflammation, and the vital organs are always more or less affected. Whichever of them it may be, the essential remedy is the same, and that is, bleeding until the animal faints. No apprehension of danger need be felt in bleeding to this extent: if the animal faints, it is rather favourable than otherwise, because we are then assured that sufficient blood has been taken for that time. But when the faintness goes off which it will soon do, if the symptoms are not considerably mitigated he must be bled again, and even a third and fourth time, should it be found necessary. Without this copious bleeding in fever, medicine will avail nothing. Next to bleeding, placing the animal in a cool situation, or even in the open air, is of the greatest importance; and, I may truly add, that the improvement introduced by Mr. Coleman, in this respect, that is, in bleeding copiously, and keeping the horse in the open air, has entitled him to the grateful remembrance of posterity.

EMOLLIENTS. Medicines or applications that sooth and allay irritation, by relaxing or softening the parts to which they are applied. They consist chiefly of oily and mucilaginous fluids, which are used externally as fomentations or poultices (see Fomentation and Poultice), at a temperature that is most agreeable with the feeling of the patient, and best adapted to the purpose for which they are employed, that is, to assuage pain, subdue inflammation, and in tumours tending to suppuration, to hasten or promote that process. When employed to subdue inflammation they are materially assisted by bleeding and purging, or by moderate doses of nitre and antimonial powder, or tartarized antimony (*emetic tartar*). Emollient fomentations are generally made with marshmallows and other mucilaginous plants or herbs, and poultices are composed of bran with oatmeal, linseed powder, lard or oil, and some of the bulbous roots, such as the white lilly or turnips, with linseed-meal or bread and milk. Internal emollients consist also of oily and mucilaginous fluids, or decoctions of marshmallow root, liquorice root, linseed, solution of gum, emulsions, &c. The effect of these also is considerably promoted by bleeding and opening medicines, as well as by nitre and antimonials, with a suitable diet; in this view they are the same as *demulcents*. (See Demulcents.)

EMULSION. A term given to preparations in which oil is blended with water, by means either of mucilage, the yolk of an egg, or a small quantity of alkali. (See Alkali.) Emulsions have a milky appearance, and are a convenient vehicle for pectoral medicines, being supposed to possess that quality in some degree.

These mixtures of oil and water, by the intervention of an alkali or mucilage, are sometimes given alone in coughs.

SIMPLE EMULSION.

Sallad oil	2 oz.
Clarified honey	3 oz.
Soft water	1 pint.
Sub-carbonate of potash	2 dr.—Mix.

PECTORAL EMULSION.

Camphor.	1 to 2 dr.

To be rubbed into a powder by means of a few drops of spirit of wine.

Oil of anise-seed........12 or 15 drops.

To this add gradually from 12 oz. to a pint of the simple emulsion. To this may be added occasionally nitrate of potash and tincture of opium, as in irritability of the bladder. An elegant and pleasant emulsion is made by rubbing blanched almonds (that is, almonds that have had the skin taken off by steeping them in hot water) in a mortar with sugar and mucilage of gum arabic. When these have been well rubbed, water is to be gradually added.

ENEMA. (See Glysters.)

EPISPASTICS. (See Blisters.)

EPSOM SALT, *Sulphate of Magnesia*, or *Vitriolated Magnesia*. A neutral salt, formed by the combination of magnesia and sulphuric acid. It is commonly obtained from sea water by a chemical process, or the water of certain springs, in which it is formed by nature. The virtues of this salt are similar to those of *Glauber's Salt*, or sulphate of soda; it is sometimes given as a laxative, the dose about twelve ounces or one pound.

ERRHINES. Powders that cause sneezing by being blown up the nostrils. They are composed generally of hellebore, snuff, asarabacca, turpeth mineral, &c.

ERYNGO, the root. A weak aromatic stimulant, of no use in veterinary medicine.

ESCHAROTICS. Mild caustics, generally in the form of powder. Such are nitric oxide of mercury (*red precipitate*), exsiccated sulphate of alumine (*burnt alum*), acetate of copper (*crystallized verdigris*), sulphate of copper (*blue vitriol*). These are applied, either separately, or two or more of them are mixed together, and finely powdered; sometimes they are mixed with bole armenic or chalk, by which they are rendered milder, or with lard or digestive ointment.

Escharotic Powders.

No. 1.	Exsiccated or burnt alum ..	2 dr.
	Nitric oxide of mercury ..	½ oz.—Mix.
No. 2.	Sulphate of copper	1 oz.
	Bole Armenic	1 oz.—Mix.
No. 3.	Acetate of copper	1 oz.
	Burnt alum	2 dr.—Mix.

See Caustics, Astringents, Digestives, and Detergents.

Escharotic Liniment.

Honey	4 oz.
Muriatic acid	1 oz.
Verdigris.	1 oz.

Mix over a slow fire.

This liniment may be made stronger by substituting nitrous acid for muriatic, or by retaining the muriatic, and substituting for the verdigris one dram of sublimate. A weaker liniment is made, and a very useful one, by using two ounces of vinegar instead of the muriatic acid. (See Egyptiacum.) Escharotics are applied to foul ulcers, and are employed to destroy fungous or proud flesh.

ESSENCE. This term is applied to essential oils, and very properly, since they generally contain all the medical virtues of the substance from which they are extracted.

ESSENCE OF PEPPERMINT. The preparation sold in the shop by this name is made by dissolving a small proportion of oil of peppermint in rectified spirit, or alcohol, that has been previously tinged with some green colour.

ESSENCE OF MUSTARD appears to be composed of camphor, oil of rosemary, and oil of turpentine, which form a good stimulating embrocation. (See Embrocation.)

ESSENTIAL OILS. The smell, taste, and other qualities of vegetables, frequently reside in a volatile oil, particularly in those vegetables, or certain parts of vegetables, that have a strong odour and taste; as mint, pennyroyal, peppermint, lavender, caraway-seeds, anise-seeds, juniper-berries, lemon-peel, santal-wood, &c. This oil, being volatile, may be extracted, and procured in a separate state, by distillation; and as it often contains the useful qualities of the substance it was obtained from, is termed an *essential oil.* (See Essence.).

ETHER. This is the most volatile liquid we are acquainted with, and evaporates readily in the common temperature of the atmosphere; it must be given, therefore, with great expedition, or a considerable part of the dose will be lost by evaporation. It is a powerful antispasmodic, and may be given with advantage in obstinate cases of flatulent colic, and other spasmodic complaints. On some occasions it is joined with tincture of opium, or camphor, with good effect.

The dose is about one ounce, which should be mixed with a pint of water.

The high price of ether prevents its being much used in veterinary medicine. It is a powerful remedy, however, when properly applied; and may be considered as an important medicine. (See vol. i.)

ETHIOP'S MINERAL. A preparation made by rubbing equal parts of quicksilver and flower of sulphur together, until the mixture becomes black, and the quicksilver invisible.

Ethiop's Mineral, though generally considered as a medicine of little power, or nearly inert, is, I am inclined to believe, possessed of considerable virtue, and will be found, probably, the best mercurial that can be employed in all cases where it is necessary to introduce mercury into the circulation, as in farcy, obstinate cases of mange, &c. It should be given in a dose of *one dram* in the horse's corn, once or twice a day. When it has been taken about ten days or a fortnight, an offensive smell will be perceived in the horse's breath, or he will be found to stale more than usual; these symptoms indicate that the mercury has got into the circulation. The disorder for which it is given may, at this period, be expected to yield to the mercurial influence, and may not require a further continuance of the medicine. I would advise a trial being made of Ethiop's mineral in the early stage of Glanders.

Ethiop's Mineral, mixed with an equal quantity of sulphuret of antimony, forms the antimonial Ethiops, and is a good remedy for cutaneous complaints. The dose two drams in the horse's corn.

EUPHORBIUM. A gum resin, that exudes spontaneously from a large oriental tree. It is brought to us in small drops, of a pale yellow colour, which are generally mixed with woody and other extraneous matter.

Euphorbium is used in veterinary practice, as an external application. It is generally employed in the form of tincture; sometimes it is mixed into an ointment with hog's lard, mercurial ointment, oil of origanum, oil of bay, &c. being previously reduced to a fine powder. It is also frequently an ingredient in strong blisters, to which it proves a powerful auxiliary. In whatever form euphorbium is employed, it proves extremely acrimonious and stimulating, and is therefore well calculated to reduce callous swellings of the back sinews, or other parts; curbs, windgalls, &c.

The tincture is made by digesting, or steeping, one ounce of the powder in four or six ounces of rectified or proof spirit; frequently shaking the bottle which contains the mixture, and keeping it in a warm place; after eight or ten days it is to be strained off, and kept well corked. Some add to this a little sublimate and oil of origanum, or camphor. There is another kind of tincture, made by digesting the powder in a strong solution of potash, which also acts very violently. In powdering euphorbium, the mortar should be placed where there is a current of air, that the dust which arises might be blown off, otherwise it would get into the nostrils or throat, and prove excessively troublesome. I do not consider Euphorbium an eligible ingredient in blisters, as there is some danger of its causing ulceration of the skin.

EXERCISE. We have observed, under the

article *Diet*, that the horse's exercise should be always proportionate to the quantity and quality of his food; or rather, that the latter should be adapted to the former, in order to preserve him in health. We have further to remark, that in other points of view exercise is of great importance. In training horses for the turf or the chase, it is by *exercise* properly conducted, and a well-regulated diet, that we enable him to perform those wonderful exertions that are required from him, and bring his wind to the highest degree of perfection which it is capable of attaining. In training a horse, whether he be designed for the turf, the chase, or the army, this precaution must always be observed,—that his exercise never exceeds his strength. Many horses have been destroyed by neglecting this precaution, particularly in the army, where we too often see horses recruited of three years old. When first brought to the regiment (perhaps from a considerable distance), they are weak and out of condition, often suffering from strangles, which, from their weak state, do not come forward properly, but affect chiefly the internal part, causing pain and difficulty in swallowing. At this time they are unfit for any kind of work, and require two months to be brought into proper condition for the riding-school. On the contrary, they are not, in general, allowed half that time, but are brought too hastily into the school, without taking time to reflect, that as they are quite unaccustomed to that, or, indeed, any kind of work, it becomes excessively fatiguing; and to young horses in a state of debility, particularly, if they are not immediately attended to, and taken great care of when brought sweating from the school, I am convinced it is often attended with destructive consequences. Exercise, therefore, should always be moderate at first, and adapted to the animal's strength: by increasing it gradually, and in proportion to his condition, he may soon be brought to bear, without inconvenience, that degree of exertion, and velocity of motion, for which he is wanted. Exercise not only prevents disease, but materially assists in the cure of many: thus, in swellings of the heels and legs, grease, inflamed eyes, &c. medicine, without proper exercise, seldom effects a cure. (See vol. i. where this subject is more fully considered.) Though many of the horse's diseases arise from want of exercise, a still greater number are produced by the immoderate and excessive exertions in which he is so frequently and so cruelly employed, especially in this country. The horses of mail and stage coaches, post chaises, &c. afford numerous examples of this. But before they are brought to this severe and generally destructive labour, they are often in a crippled and debilitated condition, by being worked at too early an age, by violent trotting upon hard roads, or hunting, or by general ill-treatment. We often find the horses that have been thus sold as coach or poſt horses are those of superior shape and action, of high spirit, and have, perhaps, distinguished themselves as hunters, or in matches against time, or in trotting matches; and being considered unsafe to ride, from their crippled state, are consigned to coach work, where they are kept upon their legs by the severity of the bit, and the frequent application of the whip. Horses do not arrive at maturity until they are six or, according to Mr. Clark, seven years old; but they are generally put to work at three or four; and scarcely any are allowed to complete their fifth year, before they are employed in the hardest labour, except among experienced sportsmen, who do not consider a horse fit for their use until he is six years old; but, during the fifth year, employ them in moderate work upon the road, or in riding to cover. The proportion of lame horses in this country, compared to those in France, is perhaps as ten to one. This the French veterinarians seem to attribute to their superior mode of shoeing; but, in my opinion, shoeing has nothing to do with it. The peculiar frequency of incurable lameness, or founder, in this country, is entirely owing to immoderate work.

EXPECTORANTS. Medicines that increase the discharge of mucus from the lungs, and thereby relieve cough and difficulty of breathing. There are many medicines which produce this effect in the human body; but in the horse the action of *expectorants* is not so perceptible. Some of the medicines, however, termed expectorants, prove serviceable in the horse, by relieving or curing cough and difficulty in breathing, or what is termed thickness of wind: among these are squill, and gum ammoniacum; both which I have often found beneficial in those complaints. But the medicines I have found most useful in chronic cough and asthma, or broken wind, are mild diuretics joined with cordials. No medicine, however, will do good in those complaints, unless the horse's diet is carefully regulated. (See Cordials, remarks on.) I have known the occasional use of these cordial diuretics, when the horse's diet is carefully attended to, not only relieve but apparently cure broken wind; but the horse's work should be moderate, and so conducted as not to interfere with digestion. If taken on a journey, he should be only walked for the first two miles. His corn should be made wet, and his hay (which must be of the best quality, and not exceed eight pounds in twenty-four hours, divided into three portions at least) should be dipped in water. When costive he should be relieved by clysters and bran mashes. This subject has been noticed, at some length, in the first volume, particularly in the last edition. (See Chronic Cough and Broken Wind.

Expectorant Balls.

Gum ammoniacum	2 to 4 dr.
Powdered squill	1 to 2 dr.
Castile soap	3 dr.
Oil of anise-seed	30 drops.
Ginger	1 dr.

Syrup enough to form the ball.

Drench.

Garlic bruised	4 oz.
Boiling vinegar	12 oz.

Macerate near the fire three or four hours, then press out the fluid part, and mix with it six ounces of honey. This is sufficient for two doses, and may be given morning and evening. It cannot, perhaps, be too often repeated that, unless the horse's diet is carefully attended to, medicine will avail but little, either in chronic cough or imperfect wind.

EXTRACT SATURN. See Goulard.

EYE-WATER, or Collyrium.

No. 1.	Super-acetate of lead (sugar of lead).	2 dr.
	Vinegar	2 to 4 oz.
	Soft water	14 oz.

Mix.

No. 2.	Sulphate of zinc	1½ dr.
	Diluted Sulphuric acid	½ dr.
	Water	1 pint.
No. 3.	Super-acetate of lead	3 dr.
	Sulphate of zinc	4 scrup.
	Water	1 pint.

Mix and strain through blotting paper.

In severe attacks of inflammation of the eye, it is often in so irritable a state as to admit only of the application of warm water, or milk and water; then either of the above eye-waters, at first diluted with an equal quantity of warm water, may be used; and when the inflammation has abated, they may be made rather stronger, and applied cold. Should the above formulæ be found ineffectual, let one, two, or three ounces of tincture of opium be added, or a larger proportion of vinegar to No. 1. than is directed. The vinous tincture of opium (*vinum opii*), undiluted, has often done good, applied by means of a small camel hair pencil brush, or squeezed into the inner corner of the eye, by means of a small bit of clean spunge. A solution of the extract of belladonna, in white wine, or diluted spirit, may also be tried. (See vol. i. and the Veterinary Dictionary, article Eye.)

FEBRIFUGE. A term given to medicines that moderate or lessen the violence of fever.

FEBRIFUGE OR FEVER BALLS.

No. 1.	Emetic tartar	1½ to 2 dr.
	Nitre	1 oz.
	Liquorice powder	3 dr.
	Syrup enough to form the ball.	
No. 2.	Antimonial powder	2 dr.
	Precipitated sulphuret of antimony	½ dr.
	Nitre	1 oz.
	Liquorice powder	3 dr.
	Treacle enough to form the mass.	
No. 3.	Camphor	1 to 2 dr.
	Nitre	6 dr. to 1 oz.
	Antimonial powder	2 dr.

Flour and treacle or syrup enough to form the ball.

Either of the above balls are to be given morning and evening, and their operation assisted by good dressing, warm water, and mashes. It should never be forgotten, that copious bleeding, at the commencement of fever, is the essential remedy, and that no medicine, or mode of treatment, will avail without it. Opening medicine or clysters are generally required also.

FENNEL. The seeds of sweet fennel are in some degree stomachic and carminative, in doses from one to two ounces. The essential oil they afford possesses the same quality in a stronger degree.

The dose is from half a dram to one dram.

FENUGREEK. The seeds only of this plant are employed for medicinal purposes: by reason of their mucilaginous quality, they are used in making poultices, and sometimes in emollient glysters. Farriers often give them internally, with what view I cannot pretend to say; since they do not appear to be adapted to the cure of any complaint. They are eaten in the Levant, and considered stomachic. The powdered fenugreek, sold in the shops, contains a large proportion (generally one-half) of pea meal. It is supposed to promote condition, especially among waggoners, and the servants of large horse proprietors.

FERN. The root of male fern was formerly considered as a remedy for worms, particularly the tape-worm: it seems now, however, to have got into disrepute. I have never heard of its being tried in horses, nor does it seem to deserve our attention.

FERRUM. See Iron.

FIGS. Mr. Taplin, who some time ago wrote so much *about* "Farriery," recommends figs and liquorice in his pectoral drinks for inflammation of the lungs! a disease that requires the most powerful remedies. Figs certainly do not possess any medical qualities worth notice.

FIRING. A severe operation often performed on the horse, and on some occasions highly useful. It consists in the application of a red-hot iron to the skin, so as to burn without penetrating through it. The violent inflammation this occasions, rouses the absorbent vessels into action, by which callous or even bony swellings are sometimes dispersed. The diseases in which it is most efficacious are spavins, ring-bones, old callous swellings about the back sinews, in consequence of strains and windgalls. Firing is supposed to brace the skin, and cause it to act as a bandage on the subjacent parts. A blister is often applied to the part immediately after firing, or on the following day, to render it more effectual. It is necessary to observe that the milder remedies should always be tried before this severe operation is had recourse to. Firing has been absurdly recommended for the purposes of strengthening the back sinews and hocks of colts, to *prevent* strains, and what is termed breaking-down. (See vol. iv. where there is a plate to show the method of throwing a horse down, and securing him for the operation, and another representing the instruments employed.)

It has been asserted, that when firing is employed for old callous swellings of the back sinews, the swelling should be previously reduced by blistering; that firing would then prevent any return of the complaint; whereas if the firing were performed in the first place, it would tend to fix the swelling, and render it incurable. I do not believe there is any ground for this opinion. It is certain, however, that when a part is in a state of inflammation, which is indicated by its being hotter and more tender than other parts, firing will do harm. The inflammation should be first removed by the frequent application of some cooling lotion, such as diluted vinegar, in which a little sugar of lead has been dissolved.

The hot iron is the most effectual remedy for those ulcers of the skin which depend upon farcy or glanders. It is employed also to remove that swelling of the roof of the mouth next the upper front teeth, which is named *lampas*. The propriety of its application in this last case is questionable. (See vol. i. Lampas.)

FIXED AIRS. (See Carbonic Acid Air.)

FIXED ALKALI. (See Alkali.)

FLAG, or *Yellow Water-Flag*. The juice

of this plant, which grows plentifully near rivers, is a strong purgative in the human system, but has not been tried in the horse.

FLAX SEED. (See Linseed.)

FLIES, SPANISH. (See Cantharides.)

FLOWER OF SULPHUR, or *Brimstone.* This is much used by farriers as an ingredient in alterative medicine. It is procured from the impure brimstone or sulphur, which is found in the neighbourhood of volcanoes, by *sublimation,* and is therefore named in the London Dispensatory SUBLIMED SULPHUR.

Flower of Sulphur is not perfectly pure however; it still retains a small quantity of sulphuric acid and other impurities, which may be carried off by washing; it then forms the milk of sulphur, or washed sulphur, of the shops.

Flower of Sulphur is sufficiently pure for veterinary purposes, and is generally given in the dose of one ounce: it is commonly joined with nitre and antimony, or nitre and resin; and is then thought to improve the coat and general condition of the horse, or remove swellings of the heels, and surfeit. I have given sulphur in a variety of doses; but the only effect I could perceive was that of a mild laxative, and that did not take place until four ounces were given at a dose. It made no alteration in the coat or skin, though the patients were hide-bound, and had rough dry coats. From the observations I made on this occasion, I do not conceive that *sulphur* is of much use as an internal remedy in the horse, or that it possesses any diaphoretic power. As a topical application in mange, it is certainly very efficacious, particularly if mixed with other remedies. (See article Mange, vol. i.)

Sulphur is very serviceable to young dogs, when they have any appearance of plethora or cutaneous disease, generally acting as a mild laxative: it may be given to them in milk, from one tea-spoonful to two or three.

A few years ago, M. Collaine, Professor of the Royal Veterinary School of Milan, published an account of some successful experiments he made on glanders. The medicine he employed was sulphur, beginning with a dose of four ounces, and increasing it gradually until he gave two pounds daily, mixed into an electuary with honey. A dose of six ounces caused purging; ten or twelve ounces griping pains and purging. Six ounces of sulphur vivum were then given, which produced a similar effect, and some of the horses became so exceedingly weak that they lay down, and were unable to rise for three or four days. When they recovered a little from these alarming symptoms, he found the discharge from the nostrils much lessened, as well as the swelling under the jaws. In some, the disease entirely disappeared, but after a few days returned, and was not permanently cured till it had fluctuated in this way several times. After they had got over the effect of the sulphur, on giving it again, he found that a dose even of twelve ounces produced no effect; he therefore increased it to eighteen ounces, and from that to twenty-four ounces; but it no longer caused either purging or griping. Having continued the use of the medicine in this large dose for some time, and finding the disease to remain stationary in some of the horses, he discontinued it for eight or ten days, in order to restore the susceptibility of the animal to the action of sulphur. On recommencing the treatment, he joined to six ounces of sulphur an equal quantity of antimony, which produced a considerable effect for about fifteen days, when it became inactive: he then gave from twelve to fifteen ounces of sulphur, with six ounces of liver of antimony, and in less than fifteen days all the horses that had not a very severe local affection were perfectly free from the disease. Similar trials have been made in France since M. Collaine's Report appeared, but the result was very different. According to M. Dupuy, in his work on Glanders (*Traité de l'Affection Tuberculeuse, vulgairement appellée* MORVE, *&c.*), lately published, sulphur has been fairly tried at the Veterinary School of Alfort, near Paris, and has not succeeded in any one instance: in large doses it causes very distressing symptoms, viz. colic, purging, and great debility. It is probable this may sometimes cause a temporary cessation of the discharge from the nostrils, and as M. Collaine has not published any thing further on the subject, he is probably become less sanguine in his expectations of curing the glanders, and, with almost all other practitioners, considers it as an incurable disease. He observes in his Report, that sulphur vivum (*soufre brut*) produced a greater effect than flowers of sulphur; and I am inclined to believe that sulphur vivum, when finely powdered and sifted through a fine sieve, will do just as well, if not better, for mange ointment or liniment, than the flower of sulphur, which is more expensive. When flower of sulphur is given internally, for mange or other cutaneous diseases, it should be joined with levigated antimony, or tartarized antimony, as in the formula under the head Alteratives, or with a small proportion of calomel, as in the following formula:

Flower of sulphur	1 to 2 oz.
Tartarized antimony	1 to 2 dr.
Calomel	1 scr. to 2.

Mix. One dose to be given daily.

FLOWERS OF BENJAMIN. These are procured from gum Benjamin, or Benzoin, by sublimation. They are of a beautiful white colour, very fragrant, and extremely light. In human medicine they are employed as a remedy for coughs and other pectoral complaints; but they are scarcely ever used in veterinary practice: a sufficient dose for a horse would be very expensive, and it is probable that gum Benjamin would answer every purpose than can be obtained from the flowers. (See Benjamin, or Benzoin Gum.)

FLOWERS, OR OXIDE OF ZINC. These also are obtained by sublimation from the metal named zinc. The medicine is said to possess a considerable tonic power. It has not, however, been given to horses, nor is it probable that it would be found an useful medicine; since white vitriol (*sulphate of zinc*), a more active preparation of the same metal, has been given to the amount of eight ounces and more, without producing any sensible effect; but it is said that in small doses, from two drams to half an ounce, white vitriol discovers a tonic quality. But this preparation as well as the other mineral tonics, such as salt of steel (sulphate of iron), and especially arsenic and sulphate of copper (blue vitriol), should be employed with caution; and not inconsiderately, in making experiments with large doses, which, though not followed immediately by ill consequences, probably injures the stomach in a considerable degree. The horse that took the white vitriol in so large a dose did not appear to suffer from it, except from irritation in the bladder; but two or three days after six ounces of blue vitriol were given, which acted as a caustic on the stomach, and produced an inflammation, attended with violent pain, which soon destroyed him. A short time since I examined the stomach of a glandered horse that had been taking blue vitriol and solution of arsenic, and found the stomach much injured, though it was not indicated by any particular symptoms during the animal's life. He appeared to be in good health at the time he was shot; had fed well, and was in good spirits. (See Tonics.)

Should any one be inclined to try the flower of zinc, they may safely begin, I think, with the dose of two drams, or half an ounce, and gradually increase it until some effect is observed. The diseases to which it is adapted are those arising from debility.

FOMENTATIONS. This term is applied to various kinds of decoctions, or medicated liquids, which are employed externally to bathe or foment any inflamed or painful part, or to improve the condition of wounds when they are very irritable, and discharge unhealthy offensive matter, approaching to a state of gangrene or mortification. Fomentations are therefore divided into the following kinds, viz. *emollient* and *anodyne.*

EMOLLIENT FOMENTATION.

No. 1. (See Emollients.)

Boil marshmallows in water for some time, then strain off the liquor, and bathe the affected parts with it while warm.

ANODYNE FOMENTATION.

No. 1. White poppy heads broken, two dozen.
Hemlock, two handsful.

Boil for two hours gently in six quarts of water.

No. 2. Wormwood dried, and camomile flowers, of each } 4 oz.
Rue . . . . 3 oz.
Bay leaves . . . . 2 oz.

Boil them for one hour in a gallon of water.

Remark.—The efficacy of a fomentation depends on its being properly applied: I have therefore to observe, that the liquid should be only as hot as the part can bear without pain. Large flannel cloths are to be dipped into the fomentation, then lightly wrung out, and spread over the affected part; by the time this gets a little cool, another cloth should be got ready, and applied in the same manner: this operation ought to be continued for half an hour at least, and repeated three or four times a day. The emollient fomentation is adapted to inflamed swellings, from whatever cause they may arise; and when it cannot be procured, warm water alone will be found an useful substitute. The anodyne fomentation, No. 1, is of great service in wounds or swellings which are accompanied with great pain and irritability: it tends to correct putridity and gangrene, in larger wounds of the lacerated kind, where the matter is thin, ill-coloured, and offensive; but in such cases the assistance of *internal* remedies cannot be dispensed with. (See vol. i.)

It is probable that warm water is as good an emollient fomentation as can be employed, if used assiduously, and at a proper temperature, which should be regulated by the state or irritability of the part to which it is applied. In inflammation of the eye, for example, it should not be above 98, or blood heat: in inflamed and painful swellings it should seldom exceed 100. In strain of the back sinew, vinegar, either alone or diluted, is a good fomentation; and as the injury is rather deeply seated, and not in the skin, the fomentation may be applied rather hotter.

When fomentations are employed for inflammation of the bowels, they should be still hotter, so hot that the hand cannot be dipped into it without pain. The best mode of applying it is by means of a long piece of woollen-cloth, with the two ends joined, that it may be wrung out of the hot fomentation, by placing a stick through each end; for the liquor makes the cloth too hot to be handled and wrung out without this contrivance. When thus applied, it may be considered as a steam fomentation, and will be found very beneficial. Two men, one on each side the horse, are required to apply this fomentation effectually. In some cases, where the swelling or injury is not extensive, the fomentation may be applied with a large sponge, in others by a thick woollen cloth, such as an old rug or blanket.

FOXGLOVE. A poisonous plant, which grows plentifully in this country, chiefly in elevated dry situations. The leaves were formerly employed as an application to ulcers and scrophulous tumours; but from its deleterious quality, was seldom used as an internal remedy. *Foxglove* is now found to possess a remarkable power of diminishing the frequency of the pulse, therefore it will probably be found a valuable medicine in those *internal inflammations* which so frequently occur in horses: their most dangerous fevers depend on this cause; and when the inflammation attacks an important part, such as the lungs or bowels, it generally terminates fatally, unless the most powerful remedies are employed at an early period. *Foxglove*, on these occasions, would perhaps greatly assist the other remedies, particularly in inflammation of the lungs. It has been lately introduced into veterinary practice, but was not attended with the expected success. The complaints in which it has been chiefly employed, are chronic cough or imperfect wind and swelling of the legs; but it does not appear to do much good. I have several times given it by way of experiment; and though I cannot say in what particular cases it will be found curative, yet I am of opinion, from the observations I then made, that it will be found, under proper management, a valuable remedy in those fevers which depend on internal inflammation, as also in catarrh, when the inflammatory symptoms are considerable. I believe no one will dispute, that if we can find a method of diminishing inflammatory action in the internal organs, without depriving the system of so great a quantity of the vital fluid as is found absolutely necessary on such occasions, it will be an invaluable discovery. No medicine appears better adapted to this purpose than *foxglove*; and it is to be hoped that its virtues will soon be thoroughly investigated.

Foxglove is an active medicine in the horse, and cannot be given with perfect safety in larger doses than half a dram; but this must be gradually increased, until some effect is perceived: the horse, however, must be carefully watched, that the effect may be seen; for if too much be given, the stomach is sometimes materially injured. The most frequent effect of Foxglove is to take off the appetite, and that effect when it has been given in a full dose, generally continues two or three days; it should therefore be given with caution.*

Whatever may be the virtues of Foxglove, it can be of no use in any kind of fever whatever. The fevers of horses are cases of internal inflammation, and can only be cured by one remedy, that is, bleeding until the animal becomes faint. It is necessary generally to take off two gallons of blood, seldom less than six quarts: and unless this is done, no remedies will avail. Medicine is of very subordinate use in fever. No apprehension need be entertained of the debility or faintness, which follows plentiful bleeding, being injurious. If the horse drops down from faintness there is no danger. One plentiful bleeding is not always sufficient; a second, a third, or even a fourth, may be necessary. Horses are sometimes relieved by less copious bleeding and medicine; but in a way that only serves to protract the fatal termination. One copious bleeding until the animal faints sometimes completely subdues the disorder, and renders every other remedy unnecessary.

FRANKINCENSE. A resinous substance, similar to yellow resin, as to its medical qualities.

FUMIGATIONS. These consist of substances which emit fumes or vapours by the application of heat, or other means. They are generally employed to destroy contagion; and though the *fumigations* recommended in books of farriery, as well as those in common use, are inadequate to that purpose, yet there are certainly some which may be productive of great advantage. *Fumigations* are employed to prevent the spreading of epidemic distempers, or to destroy the contagion of *glanders;* for which purpose I cannot, from experience, recommend any thing; though the *nitrous fumigation* of Dr. C. Smith, or the following, may be tried. When a stable is contaminated with *glanders*, the only means I can recommend with confidence are, in the first place, to remove every particle of litter, hay, dust, &c. from the stable; as well as the pail, collar, and every thing which belonged to or was used for the infected horse. The rack, manger, and every thing on which the glandered horse could possibly have rubbed his nose, are then to be well scraped, and afterwards washed with hot water and soft soap.

After this has been done, the manger, &c. should be well washed with water; for should any soap remain, it might leave a bad smell in the stable. The floor or pavement of the stall is also to be carefully washed and swept. After this the whole is to be white-washed with whiting or slaked lime, and a solution of glue. Before any sound horses are admitted into the stable, the following *fumigation* may be employed; the number of pans in which the materials are placed being adapted to the size of the stable.

Take of common salt, eight ounces.
Manganese, powdered, six ounces.

Let these be well mixed, and placed in an earthen dish; then pour on the mixture, gradually, of sulphuric acid, four ounces. As soon as the latter is added, the operator should leave the stable, shutting both the door and the windows. The fumes which arise from this mixture are highly injurious to the lungs, and must be carefully avoided; therefore this *fumigation* can only be performed in an empty stable. During the whole day the stable-door and windows are to be kept shut; but at night they may be thrown open, that there may be no danger in entering the stable the next morning. I believe this to be the only efficacious *fumiga-*

tion, having found that when glanderous matter is exposed to it a short time, it is rendered perfectly harmless. The fumes which are generated by pouring oil of vitriol, or vitriolic acid, on powdered nitre, are said to be very effectual in destroying human contagion; how far it may be serviceable in veterinary practice, remains to be ascertained; but as the *fevers* of horses do not appear to be infectious, there is no great probability of its proving useful. The term *fumigation* is applied by French Veterinary writers to the vapour arising from boiled herbs, or bran and hot water.

GALANGAL, the root. This is a warm stomachic bitter, calculated to remove indigestion and flatulency, and to promote the appetite.

The dose is about half an ounce.

GALBANUM. A gum resin; similar in its medical qualities to gum ammoniacum, but inferior in efficacy.

The dose is about three drams.

GALLS. An excrescence from the oak tree, produced by the puncture of an insect. *Galls* are powerfully astringent, but not often employed internally; they may however prove useful, in conjunction with other remedies, in suppressing obstinate diarrhœa.

The dose from two drams to four.

GALVANISM. It has been discovered within these few years, that an effect somewhat like electricity may be produced on the body by the application of different metals in a certain way; and that a short time after death, the muscles may be excited to action by the same means, producing the most curious phænomena. From the name of its discoverer, Galvani, it is termed *Galvanism*. It has lately been employed for the cure of certain diseases, and, it is said, with considerable success; therefore it may be worth a trial in those disorders of the horse for which at present we have no remedy; such as lock-jaw, gutta-serena, and other diseases of the eye. (See Wilkinson's Elements of Galvanism.)

GAMBOGE. A yellow resinous substance, which in the human system acts as a violent purgative, sometimes as an emetic also, even in small doses. In the horse it is not much employed, I believe scarcely ever; but I have found it to be an useful medicine in worm cases, facilitating the operation of Cape aloes, and increasing their purgative quality.

The dose three or four drams, or two drams with three of aloes.

GARLIC. This is often employed by farriers as a remedy for coughs and thickness of wind; and I believe that in coughs of the chronic kind it has sometimes been found efficacious.

The dose is from one to two ounces.

The cloves are separated and pounded in a mortar until they form a sort of paste, which is formed into balls with licorice powder: sometimes they are boiled in milk, and given in the form of a drench.

GENTIAN, the root. A strong and very pure bitter, well calculated to remove weakness of the stomach and indigestion. It generally requires to be joined with stimulants; such as ginger, cassia, myrrh, cascarilla, &c.; and when any acidity is suspected to exist in the stomach, a small quantity of *soda* is an useful addition. Gentian is the basis of that famous horse powder termed *diapenté.* Gentian root sometimes becomes rotten and useless: the purchaser should therefore examine before he buys, and choose such parts as are sound, rather tough, and extremely bitter. It is to be feared that the powdered gentian of the shops is not so good as it should be; and it is to be lamented that druggists in general think any thing good enough for horses.

The dose of pure gentian is from two to three drams. (See Pharm. article Tonics and Stomachics.)

GERMANDER. A low shrubby plant, bitter and somewhat astringent; but not sufficiently strong for veterinary purposes.

GINGER. A root brought from China, and the East and West Indies.

There are two sorts kept in the shops; the black, and the white ginger: the latter is stronger, and preferred for culinary purposes, on account of its more pleasant flavour, but the former is considered cheaper, easily powdered, and more frequently used as a horse medicine.

I consider ginger as the most useful stimulant in the veterinary materia medica: when joined with aromatics, caraway seed, aniseseed, cummin seed, &c., or their essential oils, it forms an efficacious cordial, and with emetic tartar and opium an excellent diaphoretic, for giving gloss to the coat, and relaxing the skin. Joined with bitters it makes a good stomachic; with squills an expectorant, often relieving obstinate coughs.

Ginger is extremely beneficial in weakness and flatulency of the stomach; and assisted by other remedies, such as oil of juniper, or camphor, it seldom fails of curing the flatulent colic, or gripes. (See Carminatives.)

The dose is from one dram and a half to three or four drams.

It should be recently powdered when used; but in a well-stopped bottle the powder may be kept a considerable time without losing its strength.

GINSENG. A moderately warm aromatic root, highly esteemed by the Chinese, but in this country scarcely ever employed.

GLAUBER'S SALT, or *Sulphate of Soda.* This neutral salt is composed of the sulphuric acid and soda, or the mineral alkali which is now termed soda in the London Pharmacopœia. In the human subject it is an efficacious purgative; but in the horse extremely inconvenient, on account of the large quantity required to produce a laxative effect.

The dose is from half a pound to a pound.

GLYSTER. (See Clyster.)

GOLDEN SULPHUR OF ANTIMONY, now named *Precipitated Sulphuret of Antimony*, and is said to increase the febrifuge power of antimonial powder. (See Febrifuge.) This preparation of antimony is scarcely known to farriers; and I believe seldom used by veterinarians. It may be found useful, however, in obstinate diseases of the skin, either alone or joined with mercurials, such as calomel, or sublimate, *muriate of quicksilver*.

The dose is from one dram to two: perhaps even more may be given with advantage; but it is adviseable to begin with a small dose.

GOULARD'S EXTRACT, now named *Liquid Subacetate of Lead.* (See Acetate of Lead, and Lead.) Extract of saturn, or lead. This is made from litharge and vinegar, by simmering them together over a gentle fire, until the vinegar has dissolved as much as it is capable of. Goulard, therefore, is nothing more than a solution of litharge in vinegar. It is a very useful application in cases of external inflammation, and may be used either as a lotion or in the form of poultice. Goulard lotion is made by mixing half an ounce of the extract to a pint of rain or river water: some add to this a little camphorated spirit, or some distilled vinegar; but when the lotion is intended for the eyes, there must be a much larger proportion of water, not less than a quart, and the lotion should be filtered.

Goulard poultice is made by mixing as much of the lotion, with bran, linseed, meal, or any proper materials for poultice, as will give them a proper consistence. (See Poultices and Lotions.)

Goulard is never used undiluted, nor is it given internally.

GRAINS OF PARADISE. A warm stimulating seed, often used by farriers, in the diseases of horned cattle, as a cordial; and where medicines of that kind are required, it is certainly very proper: but it is necessary to consider the case well before this medicine is employed; for if the complaint be of an inflammatory nature, Grains of Paradise, being a powerful stimulant, may do much injury.

The dose is from three to six drams, or one ounce.

GROUND IVY was formerly considered as an excellent remedy in pulmonary complaints; but it is now disregarded by medical practitioners, and is certainly useless in veterinary practice.

GRUEL is an useful drink for horses on many occasions, and when made carefully, or sweetened with sugar or treacle, and sometimes seasoned with salt, they will often drink it, and save the trouble of drenching. It is a good vehicle for such medicines as are of a stimulating or acrimonious nature, such as oil of turpentine. Gruel is made either with oatmeal or grotts, barley meal or pearl barley, fine wheat flour or arrow root: it may be made also with sago, salep or tapioca; either of these is to be boiled in water, and for some purposes in milk or broth.

Gruel is often made merely by stirring some oatmeal into warm water; but it is better when boiled; and when grotts or pearl barley are employed, it should be boiled a short time, and the first water thrown away; the gruel will then be free from an unpleasant taste which these substances contract by keeping: when they are first crushed or bruised the gruel is richer, and more expeditiously made. Gruel is an useful restorative for weak or convalescent horses, being very nutritious and easy of digestion: perhaps nothing is more nutritious than wheat flour gruel made with milk and sweetened with sugar. In India it is a common practice to give horses strong broths, thickened with grain or flour, and seasoned with pepper or other spices, when they work hard, or as a restorative cordial. Infusion of malt makes a good nutritive drink for horses; but good *sweet* grotts make an excellent gruel. Oatmeal is sometimes musty, and gruel made with it has often some degree of bitterness. When gruel is given as a cordial restorative after hard work, a little beer and ginger may, on some occasions, be added. Horses that are exhausted by long fasting and fatigue, are soon recruited by taking such gruel. Horses are very nice in their drinking, therefore the gruel should be made in a clean saucepan, free from the smell of meat, smoke, or fat. For some purposes, or where it is inconvenient to boil the gruel, a little oat, barley, or wheat meal, may be stirred into warm or cold water.

GUAIACUM. The wood and resin. The former is sometimes employed in human medicine, as an ingredient in alterative decoctions, but never in veterinary practice. The resin, commonly called *gum guaiacum*, is sometimes used as an alterative. Farriers employ it also in what they suppose to be rheumatic lameness; but without any advantage, I believe. Rheumatism seldom attacks horses: when it does occur, purgatives, with moderate exercise, are the best remedies.

The dose of gum guaiacum is from half an ounce to six drams.

There is a volatile tincture of guaiacum sold in the shops, which seems better adapted to rheumatic complaints than the gum alone; but its use should be preceded by a purgative.

The dose is one ounce.

GUINEA PEPPER. (See Cayenne Pepper.)

GUM. There are various kinds of gum, which may be distinguished by their solubility in water, and by forming therewith a mucilage. The principal are; gum arabic, gum dragant, and India gum. The first two are the best.

Gum dissolved in water makes useful drinks in inflammatory complaints of the bowels, kidneys, bladder, and lungs.

GUM RESIN. A natural mixture of gum and resin.

HARTSHORN. The horns of stags were formerly supposed to possess peculiar qualities; but upon a chemical analysis they are found to be very similar to bone, which is now substitued for it upon all occasions; on boiling they yield a great deal of jelly, which is more readily extracted when they are crushed or cut into shavings: by distillation they yield ammonia and animal oil.

HARTSHORN. Spirit and Salt of. (See Ammonia.)

HAY. Clover and the coarser kinds of hay are said to be best adapted to draft-horses, and such as are employed in slow but laborious exercise; while saddle-horses are thought to do better with the finer kinds of hay. I believe, however, the former is most nutritious; and if the quantity allowed is suited to the horse's employment, it may be given to every kind of horse with advantage. (See vol. i. Feeding.)

HELLEBORE, white and black. The root of this plant, particularly the white hellebore, is extremely acrimonious; for if wounded while fresh, it emits a juice capable of blistering the skin.

Powdered white hellebore is often employed as an ingredient in blisters. It is used also in ointments for the mange, and other cutaneous diseases. A decoction of white hellebore is often employed for the same purpose; but other medicines are generally added to it; as sulphur vivum, turpentine, white vitriol, or alum. Hellebore has been tried as an *internal* remedy in the horse; but its effect was so violent, even in the small dose of half a dram, that it is now considered a very dangerous medicine.*

---

* I have lately had an opportunity of trying the effect of white hellebore, and did not find it so violent or so dangerous as it was said to be after an experiment made at the Veterinary College. To a glandered horse we gave half an ounce of the powder of white hellebore, expecting it would destroy him; but it produced no effect: an ounce was then given, which caused an appearance of sickness, and a copious discharge of saliva from the mouth. It was given afterwards to several horses; and we uniformly found that in the dose of half an ounce given daily, it produced the effect we have just described. In some, the first dose caused an appearance of sickness and salivation; others took several doses before any effect was observed. It was given daily in a case of farcy, in the dose of half an ounce, and the horse got well; no other remedy was employed, except blisters: in none of the experiments did it cause any dangerous symptoms, but it certainly caused a very painful sensation in the stomach. (See Cathartics, remarks on.)

Black Hellebore is never used in horse medicine.

HEMLOCK. A strong narcotic; but on many occasions an useful medicine, possessing, like opium, an anodyne quality, but not so certain in its effect. It is said, however, not to produce costiveness, like opium; and as far as I have been able to judge, this observation holds good with respect to the horse. The complaint in which it has been chiefly employed in veterinary practice, is obstinate cough, depending upon irritability.

The leaves are to be carefully dried and powdered. The powder must be kept in a well-stopped bottle, from which the light should be excluded.

The dose is about a dram; but it may be gradually increased to a much larger quantity.

There is an extract made from hemlock, which, when prepared, is a very convenient form, and not less efficacious than the powder.

The dose is about a dram; but this also may be gradually augmented to a considerable quantity.

A decoction of green hemlock is said to be an useful fomentation in painful wounds and tumours. Since writing the above, I gave about half a pound of green hemlock to a young ass;

he eat it readily, but it did not produce any sensible effect. It has been said that goats eat hemlock, and are nourished by it.

HENBANE, Hyosciamus. This plant also is a powerful narcotic, and free from the constipating effect of opium. It has not hitherto been used in veterinary medicine.

The seeds are said to be the most powerful part of the plant; but the powdered leaves and the extract are more commonly employed in human medicine.

HEPATIC ALOES. (See Aloes.)

HIERA PICRA. A warm stomachic purgative, composed of aloes, three or four parts, canella one part. A somewhat similar composition has been admitted into the London dispensatory, under the name of compound powder of aloes, but in this gum guaiacum and aromatic powder are ingredients.

Aloes	1½ oz.
Gum guaiacum.	1 oz.
Aromatic powder	½ oz.—Mix.

HOG'S LARD. An article of some importance in veterinary surgery, being the basis of almost every ointment.

Hog's Lard possesses a laxative quality, and may be given to the extent of half a pound, melted and mixed with warm water or peppermint water, as a substitute for castor oil, olive oil, or linseed oil, when neither of those can be procured.

HONEY. A small quantity of honey, dissolved in linseed infusion, is often used in those troublesome coughs which arise from irritation, and serves in this way as a good auxiliary to more important remedies. Honey is sometimes added to a solution of alum, as a lotion for the mouth, when it is inflamed and sore.

Honey is nutritious and rather laxative, and may be occasionally given as a restorative mixed with milk or gruel made with wheat flour and milk. (See Gruel.) With vinegar it forms an oxymel, and when squills, garlic, &c. have been previously infused in the vinegar, it forms with it oxymel of squills, garlic, &c. which are considered good medicines in chronic cough. Honey is a convenient substance for forming balls. It is sometimes used also as a basis for liniments or ointments (see Egyptiacum); and when made into a syrup with an infusion of roses, it forms honey of roses, which with alum forms an useful wash for soreness of the mouth, lampas, &c. (See vol. i.)

HOOF OINTMENT.

No. 1. Tar and tallow, of each equal parts.

When melted let the mixture be removed from the fire, and stirred until it is cold.

No. 2. Pitch, tar, and hog's lard, equal parts. Melt as above.

These ointments are applied to the coronet and heels, when dry and cracking.

HOP, Humulus. A decoction of hops is a good stomachic, bitter and anodyne, possessing a weak narcotic quality. It forms also a good anodyne and discutient fomentation.

HOREHOUND. A bitter herb, with some degree of roughness or astringency.

Horehound is rather a popular remedy for obstinate coughs, asthmas, and other complaints of the lungs, but has been very seldom employed in veterinary practice: it may however be used in chronic cough, when the usual remedies fail, either in the form of powder, or decoction.

No great precision is necessary in adjusting the dose; one or two ounces of the powder, or a quart of the decoction, may be given at once.

HORSE-RADISH. The root of horse-radish, when fresh, is a powerful stimulant. All its virtues may be extracted by distilling the root with water, or spirit; in which state it may be kept a long time without losing its strength. Horse-radish water, with a small proportion of spirit, is a cheap medicine in cases of flatulency and indigestion, and is the most convenient form in which it can be given; it possesses also a diuretic and diaphoretic quality. Its acrimony is destroyed by boiling, it is therefore given either as an infusion, or beaten into a mass with flour as a ball. If beaten into a mass, and formed into a paste, with flour of mustard and water, it is capable of blistering the skin.

HYPERICUM, St. John's Wort. An oil of St. John's wort is sold by druggists, which appears to be olive oil coloured with verdigris, or the leaves of some vegetable. It is still employed by farriers as an ingredient in strain oils, though not more efficacious than olive oil.

HYSSOP. This plant has been esteemed as a *pectoral*, but it is seldom employed in modern practice; nor as a veterinary medicine is it worth notice.

INFUSIONS. Medicated liquids, made by pouring boiling or cold water on any vegetable or medicine, whose virtues it is capable of extracting. When the medicinal principles of a vegetable are of a volatile nature, and liable to evaporate by boiling, they are extracted by being steeped in hot or cold water. The liquid thus obtained is termed hot or cold *infusion*. Chamomile flowers, peppermint, and other aromatic herbs, are to be infused in hot water; logwood, guaiacum, and bark, require to be boiled, the latter a short time only, the two former much longer. (See Decoction.)

INDIAN PINK. Though the root of this plant is often employed for the purpose of destroying worms in the human body, yet it does not seem at all adapted to the same purpose in the horse.

IPECACUANA. There are few medicines of greater importance in medical practice than the root of ipecacuana: but it has so little effect on the horse, though given in very expensive doses, that it is not likely ever to be considered an article of our Materia Medica. Its principal use, in human medicine, is to excite vomiting; an effect it cannot produce in the horse in the largest dose. Combined with opium, it acts as a sudorific in the human body; but for the horse we do not know any medicine, I believe, that is capable of exciting *sensible* perspiration or sweating, with any degree of certainty, though it is easily brought on by violent exercise, or immoderately warm clothing, and sometimes happens spontaneously. Still, however, ipecacuana may promote the *insensible* perspiration,* like emetic tartar; and opium may be an useful addition to it.

A mixture of opium, ipecacuana, and vitriolated tartar (one dram of the first two, to one ounce of the last,) forms the celebrated *Dover's Powder* (*Compound Powder of Ipecacuana*), which has been recommended by a late veterinary writer.*

IRON. This is one of the most abundant metallic productions of nature; its ores are found, in almost every part of the globe, in the soil and often in the water, and as a constituent of vegetable and animal bodies. The preparations of iron, used in medicine, are, 1st, sulphate of iron, or salt of steel; 2d, muriate of iron; 3d, subcarbonate of iron; 4th,

---

* In the human body, ipecacuana is a safe and effectual emetic, and, in small doses, proves an excellent expectorant and diaphoretic; it is said also to excite appetite, and promote digestion, when given daily in small doses. It has been but little used in veterinary practice, but probably may be found useful in asthmatic cough. I gave one ounce of ipecacuana to a young ass, but it did not produce any perceptible effect. Mr. Blaine prescribes it in dysentery, in the dose of half an ounce, with opium, two drams; nux vomica one dram; red wine one quart. If Mr. Blaine ever made use of this composition, it is to be hoped, that no person will follow his example, as it is much more likely to produce a disease of the stomach or bowels, than cure one. The expence will be sufficient, probably, to prevent its being used, as it cannot be made for less than eight shillings the dose; and is directed to be given morning and evening. If ipecacuana is given as an expectorant. The following formula may be tried:

Ipecacuana, powdered squills, of each	1 dr.
Castile soap	2 dr.
Powdered caraways...........................	3 dr.

Syrup enough to form the ball; to be given morning and evening.

tartarized iron; 5th, red oxide of iron, or colcothar of vitriol; 6th, rust of iron; and, 7th, scales of iron. They are all considered powerful tonics in the human body, but are not often given to horses. The dose of No. 1, is from 1 dram to 3. No. 2, 1 dram to 2 or 3. No. 3, 2 drams to 4. No. 4, 3 drams to 5. No. 5, 4 drams to 6. No. 6, 2 drams to 4. No. 7, 2 drams to 4, finely powered. Preparations of iron are generally mixed with aromatics, and sometimes with soda. In speaking of the metallic preparations, I think it necessary to repeat that great caution is required in the use of them. Iron is, perhaps, the most innocent, and may be possessed of considerable tonic power; but, before it is employed, let wholesome food, moderate exercise, and good grooming, have a fair trial. (See vol. i. 12th edition, article Stable.)

ISINGLASS. This is said to consist of the dried membranes of the sturgeon, or some fish resembling it: the mode of preparation, however, is kept a profound secret. When dissolved in water it forms a strong mucilage, which is an useful emollient, and serves to sheathe the bowels, bladder, &c. when inflamed or irritated.

JALAP. In the human body, the root of jalap is a certain and efficacious purgative; and there is scarcely a book on farriery in which it is not recommended as an ingredient in purgative balls or physic; which practice is still followed by farriers, who generally put two or three drams of jalap into every dose of physic. It has been tried, however, first at the Veterinary College, and was found to have no purgative effect on the horse, though given in considerably larger doses than farriers ever employ: but I have observed, that in a very large quantity it occasions sickness, and some degree of purging, though its effects in this way are by no means sufficient to induce any one to employ it as a purgative alone.

I once gave eight ounces of jalap at one dose to a glandered horse, that was in other respects healthy, and had not been taking any other medicine: in about six hours the horse appeared sick, and in pain; he refused both food and water; during the night he appeared to have had some small watery stools, several of which were perceived also the next day; but they were in very small quantity, and accompanied with pain. The sickness continued all this day, and on the following he recovered. It is not very improbable, however, that jalap, in combination with aloes and calomel, may have an useful effect. (See Cathartics, remarks on.) I have heard it remarked that jalap certainly assists in the operation of aloes, and that even Cape aloes, when joined with jalap, may be employed as a purgative.

JAMAICA PEPPER, or *Allspice.* This is a good carminative, and may be given in doses from half an ounce to an ounce, in flatulency of the stomach and bowels, and may be used also as an ingredient in cordial medicines.

The following tincture is strongly recommended, by Mr. Bracy Clark, as an excellent remedy for the flatulent colic, gripes, or fret.

Jamaica pepper	8 oz.
Proof spirit	3 pints.—Mix.

Let the allspice be powdered, and mixed with the spirit; the bottle to be well-corked, and frequently shaken. In two or three weeks the tincture will be fit for use. The dose about half a pint diluted with water.

JAMES'S POWDER. Though the preparation of this medicine has been hitherto kept secret, there is no reason to doubt its being composed chiefly of antimony, and nearly the same thing as that which is sold in the shops by the name of *Antimonial Powder.* (See Antimony.) I can venture to assert, that, as a horse medicine, this is as useful and efficacious as *James's Powder.* It is said to be an excellent medicine in fevers of every kind; and, though usually given in the small dose of a scruple, or half a dram, may be exhibited with perfect safety and better effect in a much larger quantity. I never give less than two drams, and sometimes three; and I have seen even one ounce given at a dose without the least inconvenience. It seems to act on the skin like emetic tartar, and promote the insensible perspiration; but I do not think it so certain in its effect as emetic tartar: it is sometimes joined with opium, camphor, nitre, or ginger, according to the nature of the disease: with ginger it forms a good medicine for horses that are hide-bound; but this compound is not proper in fevers, or any complaint arising from inflammation; and the fevers of horses are almost always inflammatory. It is most commonly given with nitre, or with nitre and camphor; and some practitioners prefer it, as a fever medicine, to tartarized antimony (*emetic tartar*). It has been asserted that it is much improved as a diaphoretic in the human subject, by the addition of one fourth of its weight of precipitated sulphuret of antimony. (See Febrifuges.)

JAPAN EARTH, improperly so called, being an extract of an Indian plant. It possesses a considerable astrigent power, and is sometimes found beneficial in those *diarrhœas* or loosenesses which are caused by weakness and relaxation of the intestines.

It may be employed also in *diabetes*, or profuse staling, with alum, opium, ginger, or other remedies suited to the particular circumstances of the case.

The dose is from two drams to three or four. (See Catechu.)

JESUITS BARK. (See Bark.)

JOHNSWORT. There is an oil of Johnswort kept by druggists, which appears to be nothing more than common oil coloured with verdigris. The herb was formerly employed in fomentations, but is now thought unworthy of notice.

JUNIPER. Many virtues have been attributed to the *berries* of this shrub; but without any foundation, except as to its *diuretic* and carminative qualities, which it certainly possesses to a considerable degree. Juniper berries generally form a part of diuretic balls and drenches; they are recommended also in flatulency of the stomach and bowels.

The dose is from one ounce to two ounces.

Juniper berries are often injured by keeping; becoming dry, shrivelled, or nearly rotten. The purchaser should choose such as are plump, rather heavy, and moist internally.

An oil is obtained from juniper by distillation, which seems to be the part on which the virtues of the berry depend. Oil of juniper is an excellent carminative and diuretic: the dose is from one dram to two or three. It is generally highly adulterated with oil of turpentine; but this admixture does not injure it materially; oil of turpentine being very similar to it in its medical qualities, though more powerful.

KALI. A name which the London College of physicians once gave to pure vegetable alkali, or potash. (See Potash.) It is now named potash.

KERMES MINERAL. A red powder prepared from antimony, nearly the same as the golden sulphur of antimony, and recommended as an alterative, in doses from one to two or three drams. (See Antimony, and Golden Sulphur of Antimony.)

KINO. A resinous substance, possessing a strong astringent quality: a good remedy in diarrhœas which depend on relaxation of the intestines.

The dose is from two to four drams.

LAC. A resin of a dark colour, deposited by an insect of the East Indies on the small branches of trees. It is now employed only in the composition of sealing-wax and varnishes.

LADANUM. A resinous substance brought from Candia. It has been recommended as a pectoral medicine; but probably does not possess any quality of that kind, as it is now used only as an ingredient in a warm stimulating plaster which is of no use in veterinary practice.

LAUDANUM. A popular term for tincture of opium. (See Opium.)

LAVENDER. A plant whose distilled water and fragant oil are employed in medicine, but not in the veterinary practice.

LAUREL, or *Bay*. The leaves of bay are used in *fomentations*, and the berries are employed as a stomachic. They yield an oil also which is used externally. (See Bay.)

LAXATIVES. Medicines that open the bowels moderately, without stimulating or irritating them much, so as to increase their secretions. They consist of castor oil, olive, or linseed oil, the neutral salts, such as Epsom or Glauber's salt, or even common salt, and small doses of aloes, as in the following formula:

Laxative Drench.

No. 1.	Castor oil	1 pint.
No. 2.	Sweet oil, or linseed, or rape oil	1 pint.
No. 3.	Epsom salt	6 to 12 oz.
	Whey or gruel	1 quart.
	Castor oil	6 to 12 oz.—Mix.
No. 4.	Powdered aloes	2 to 3 dr.
	Carbonate of potash	2 dr.
No. 5.	Water	8 oz.
	Castor oil	8 oz.—Mix.

BALL.

Aloes .... 3 to 4 dr.
Soap .... 3 to 4 dr.
Syrup enough to form a ball.

LEAD. Many useful preparations are made from this metal; among which are Goulard's extract, sugar of lead, litharge, and the following:—

LEAD, RED, or *Minium*. This is a red powder, made by keeping lead in a high degree of heat: it is used in the composition of plasters, and charges.

LEAD, WHITE, is commonly made by exposing thin sheets of lead to the vapour of vinegar, by which it is converted into a white powder. White lead is often employed in the composition of healing and softening ointment, for horses that are subject to cracked heels. (See Acetate of Lead.)

LEECHES. It is difficult to draw blood by means of leeches, in the horse; it may be accomplished, perhaps, by shaving the part, and puncturing it with a lancet: there are few cases, however, in which they are likely to be useful.

LENETIVE ELECTUARY. (See Senna.)

LEOPARD'S BANE. This plant has been recommended as a febrifuge, but is never employed in veterinary medicine.

LIME. Lime-water is recommended in the disease termed diabetes, which consists in a profuse discharge of limpid urine, causing weakness, emaciation, and hectic fever.

I have seen it used, however, in two cases without success.—Lime-water is made by mixing lime with a large proportion of boiling water, stirring the mixture for some time, and afterwards pouring off the transparent liquor, which is to be carefully excluded from the air. During the whole process, indeed, there should be as little exposure to air as possible.

LINIMENT. A term generally given to external applications of the oily kind, but of a consistence rather thicker than oil, sometimes it is applied to more liquid, and transparent preparations, such as soap liniment. The follow formula are given as examples:

SOAP LINIMENT.

Hard soap	3 oz.
Camphor	1 oz.
Oil of rosemary	1 oz.
Rectified spirit	1 pint.

Cut up the soap, and let it stand with the spirit until dissolved, then add the rest.

LINIMENT OF AMMONIA, OR VOLATILE LINIMENT.

Strong solution of ammonia.	1 oz.
Olive oil	2 oz.—Mix.

To this, camphor, or oil of turpentine is sometimes added; and the solution of ammonia is joined, for some purposes, to the soap liniment. The soap liniment is the same as the celebrated opodeldoc, and be either solid or fluid, according to the proportion of soap used; but it may be made also with soft soap, and is then fluid, with a large proportion of soap. *Liniment of Verdigris* is noticed under the head EGYPTIACUM.

LINIMENT OF CAMPHOR, COMPOUND.

Camphor	2 oz.
Spirit of lavender	1 pint.
Solution of ammonia	6 oz.—Mix.

Solution of ammonia is named also liquid Ammonia, and strong spirit of sal ammoniac. (See Embrocations.)

LINIMENT FOR BAD THRUSHES AND CANKER.

Tar	4 oz.—Melt, and add
Muriatic acid	6 dr.
Verdigris	4 dr.

Mix, continue stirring until it is cold.

LINSEED, or *flax-seed.* These seeds abound with oil and mucilage, and are well adapted to the composition of those emollient drinks that are so useful in inflammations of the bladder and bowels, or complaints of the urinary passages. A strong mucilaginous drink may be made without bruising the seeds, either by decoction or infusion. (See Emollients and Pectorals.)

Linseed Cake. That part of the linseed which remains after the oil has been pressed out. It is sometimes employed to fatten cattle, and may be given occasionally to horses. When ground it is sold as linseed meal and linseed powder, and often used in the composition of poultices. It is an ingredient also in most of the horse and cattle powders, and serves to adulterate, on account of its cheapness, many of the medicines sold in powder, as drenches for horses and cattle.

Linseed Oil. This oil is sometimes employed as a laxative, and, though very inferior to castor oil, and even to olive oil, may be occasionally substituted for it on account of its being much less expensive. It is used also in making pectoral emulsions, and in the composition of liniments and ointments; but even for these purposes olive oil is preferable, on account of the drying quality of linseed oil. (See Laxatives.)

LICORICE. An extract made from licorice root, and supposed to be of use in relieving cough. In the horse it is not applicable to this purpose, as its good effect depends upon its gradual solution in the mouth, so as to be constantly lubricating the throat. Many writers, however, recommend licorice in their pectoral and cordial drenches, probably with a view to render them more palatable.

LITHARGE. An oxide or calx, of lead employed in making Goulard's extract and diachylon plaster.

LOGWOOD. An extract is made from logwood which possesses a considerable astringent power: it is often employed by medical practitioners in diarrhœa depending upon relaxation of the bowels; and though it has not yet been introduced into veterinary practice, it would probably be found an useful medicine in similar complaints of the horse, and deserves a trial in cases which have resisted the common remedies.

It may be given in doses from two to three drams. Alum, opium, and some aromatic, such as cassia, are often joined with the *extract*, and sometimes chalk.

LYTTA. (See Cantharides.)

MACE. A pleasant aromatic spice, too expensive for veterinary purposes: nor is there any complaint in which it is particularly required; as cassia, cardamoms, caraway, and anise-seed, are more effectual, and considerably cheaper.

MADDER. This root was formerly used

in medicine as a remedy for jaundice. Farriers still employ it for the same complaint, (which they term the *yellows*), both in horses and horned cattle. In the former, the disease most commonly arises from increased or morbid action or inflammation of the *liver*. Little reliance is to be placed on madder.

The dose is about one ounce. (See vol. i.)

MAGNESIA. A white powder, so extremely light that a sufficient dose could not be given to a horse without great inconvenience. It is a very useful *absorbent* in the human body, and well calculated to remove *heart-burn*, by destroying any acidity that may exist in the stomach; it has also the advantage of acting as a gentle laxative. But in the horse, chalk, or either of the fixed alkalies, answers the purpose equally well; and if a laxative effect is required, a small does of aloes may be added. (See Absorbents and Alkali.)

MAIDEN HAIR. An old remedy for coughs, but not proper for veterinary practice.

MALACCA BEAN. The acrid matter which renders this bean useful is contained between two membranes which cover the kernel. The Malays employ it for destroying fungous or proud flesh; and, from its corrosive quality, it would probably be found useful as an external application in horses.

MALLOWS. This plant is useful in the composition of emollient drinks, from the mucilage it contains: fomentations, glysters, and poultices, may also be made with it. (See Emollients, Fomentations, and Clysters.)

MALT is very serviceable to horses that are recovering from fever: it is useful, also, when the system is weakened by large abscesses which discharge copiously, and in almost every case depending on debility.

It appears to be easy of digestion, and very nutritious, though not so stimulating as oats. Green malt has been recommended for improving the condition of horses, and giving them a smooth glossy coat. Infusion of malt is sometimes given with advantage to sick horses; but they generally require to be drenched with it, which is a great inconvenience.

MANGANESE. A metallic oxide used principally in bleaching. It has been employed for fumigating glandered stables. (See Fumigation, and vol. iii. article Glanders.)

MANNA, a gentle laxative; but never used in the diseases of horses.

MARJORAM. An agreeable aromatic herb, whose essential oil possesses nearly the same properties as the oil of origanum; a remedy much used by farriers in strains, bruises, &c. but always mixed with other oils or spirits, such as oil of elder, camphorated spirit, &c. A strong infusion of marjoram may be employed as a vehicle for carminative or cordial medicine.

MARSH MALLOW. This plant contains rather more mucilage than common mallows, and is therefore better calculated for making mucilaginous or emollient drinks, clysters, or fomentations.

The *root* is the best part, which, if carefully dried, may be kept a long time. These mucilaginous drinks are very useful when the bowels or bladder are inflamed or irritated by too strong physic, or when there is any pain in the urinary passages. They should be given frequently in the course of the day, and may occasionally be made the vehicle of more active medicines. Any thing which contains mucilage in sufficient quantity may be employed for the purpose of making emollient drinks. (See Emollient.)

MARUM, or *Syrian Herb Mastich.*—This plant, when dry, is extremely stimulating, and excites violent sneezing when applied to the membrane of the nostrils; for which purpose it is employed by medical practitioners, and may be applied to a similar purpose in veterinary practice.

MASHES. A kind of medicated diet, and generally composed either of bran or malt.

Bran mashes are made by pouring boiling water on fresh sweet bran, in a pail, so that the mixture, when stirred, may be about the consistence of a soft poultice; it is then to be covered over, and not given to the horse until sufficiently cold. When it is thought necessary to steam the head, as it is termed,—that is, for the horse to inhale the vapour as it arises,—the mash is put into the manger while hot; and some even put it into a nose-bag and secure it to the head, which is a bad practice, as it impedes respiration. *Steaming the head* is recommended in strangles, colds, and sore-throats.

BRAN MASHES form a very proper diet in fever, and all inflammatory complaints; they are useful, also, as a preparative to *physic*, serving to remove any indurated fæces there may be in the bowels, whereby the operation of the medicine is rendered more safe and effectual. *Mashes* are a necessary diet, also, while the *physic* is operating. In making *malt mashes*, the water should be below the boiling point; otherwise the malt would clot, and be spoiled. These are given for the purpose of recruiting strength, when a horse is debilitated from fever or any other cause. (See Malt and Restoratives.)

MASSICOT. A yellow oxide or calx of lead.

MASTICH. A resin, used chiefly in the composition of varnishes.

MEADOW SAFFRON. The root of this plant is a powerful diuretic in the human system, but its effect on the horse is not known.

MECHOACAN. The *root* was employed as a purgative before *jalap* was known. It is much weaker than jalap; nor does it possess a single quality which can recommend it as a horse medicine.

MELILOT. This plant was sometimes employed in the composition of *glysters*, and a plaster, but is now seldom applied to any medical purpose.

MERCURIALS. Preparations of quicksilver or mercury.

Mercurial Ointment. This is made by rubbing together, in a mortar, quicksilver and hog's lard, in various proportions, according to the strength required, until the former disappears, and the mixture assumes a dark blue or lead colour.

In the strongest *mercurial ointment* of the shops, there are equal parts of quicksilver and lard: these are the best proportions in which it can be made, as it is easily made weaker afterwards, by the addition of lard. In medical practice this ointment is employed chiefly for the purpose of introducing the quicksilver into the system, which is done by rubbing it for some time on the skin: this is said to be the most safe and effectual method of curing the venereal disease; but, in the horse, considerable difficulty and inconvenience attend this operation, though it may be made to affect the system. Thus, if we wish to introduce mercury into the circulation, it is better to give some preparation internally. (See Quicksilver.)

Mercurial Ointment, however, is often employed in veterinary practice, as an application to callous swellings, or enlarged joints: it is often mixed with camphor in those cases; and is certainly much more efficacious when converted into a blister by the addition of cantharides or Spanish flies, or euphorbium. In this state it is a good remedy for bog spavin, or other swellings of the hock joint.

Mercurial Ointment is said to be an effectual remedy for the *scab* in sheep, and is often an ingredient in ointments for the *mange*. In making *mercurial ointment* the operation is considerably expedited by using a small quantity of old suet, tallow that is rancid, or venice turpentine.

Persons unacquainted with pharmacy commonly prefer *mercurial ointment* that has been recently prepared. It is said, however, that old and rather rancid ointment is more powerful, particularly if rubbed for some time in a mortar before used.

MERCURY. *Quicksilver* is commonly distin- by this name; the various preparations of which will be described in their proper places. (See Calomel, Sublimate, Cinnabar, Ethiop's Mineral, Precipitate White and Red, Oxide of Mercury, Mercurial Ointment, &c.)

MERCURY or *Quicksilver* is found in Spain, Germany, and Hungary, Siberia, the Phillippines, China, and Peru. The most productive mines are those of Idria, Carinthia, and the Palatinate. It is found either in a metallic state, or combined with silver or sulphur, with the latter, it forms native cinnabar. It is found also combined with the muriatic acid, which is named corneous mercury. It is separated from these combinations by distilling it with quicklime. Mercury, in its metallic state, exerts no action on the animal system; it has nevertheless been exhibited in doses of a pound in the human subject, with a view of operating mechanically in the removal of obstructions in the intestines; but as it cannot act by its gravity on the ascending part of the bowels, it is not easy to conceive how it should ever have been recommended; and the events of the cases, in which it has been given, have sufficiently proved the futility of the practice. I once gave half a pound to a healthy dog; and, though made to stand upright on his hind legs for ten minutes after, and then shut up in a large tub for several hours, no part of the quicksilver was discharged; he then ran away, and we heard nothing more of him. When mercury is prepared for medicinal use, it is a remedy of the most extensive application; it is a powerful and general stimulant; it enters into the circulation, quickens the motion of the blood, and excites powerfully the whole glandular system, increasing all the secretions and excretions. Though much mischief may have arisen from the imprudent use of the different preparations of this useful metal; yet, in the hands of judicious and cautious practitioners, they may be considered as among the most useful articles of the materia medica.

The following are the preparations commonly employed:

Rubbed in a mortar with animal fat it forms *mercurial ointment:* with honey it forms *quicksilver* or *blue pill.* Oxidized or calcined by exposure to heat and air, *red oxide of mercury* or *calcined mercury.* With sulphuric acid, *yellow subsulphate of mercury* or *turbeth mineral.* With nitrous acid and hog's lard, *ointment of nitrated quicksilver* or *citrine ointment.* With nitric acid, *nitric* or *nitrated oxide of mercury* (red precipitate). With muriatic acid, *oxymuriate of mercury* (corrosive sublimate, and, in a different state of oxidizement, submuriate of mercury or calomel.) This, when washed with liquid ammonia and dried, is rendered milder, and changed to a grey colour, and is sometimes employed in mercurial fumigations.

MEZEREON. A root much used in medicine, in venereal and rheumatic complaints, but not calculated for veterinary purposes.

MILLIPEDES, or *Hog's Lice.* These were formerly employed by medical practitioners as a diuretic; but now quite disregarded.

MINDERUS'S SPIRIT. The dose is from six to eight ounces, dilated. (See Acetate of Ammonia.)

MINERAL WATERS are too weak for veterinary purposes. It has been remarked by experienced persons, that waters impregnated with saline bodies, which are commonly said to be *brackish*, are generally injurious to horses; and I have observed that horses seldom do well on the coast, where the greater part of the water is in this state. This may arise from their not drinking a sufficient quantity for the purposes of digestion, on account of its disagreeable taste; for they often receive much benefit when at grass in such situations. It has been generally remarked that cavalry regiments, stationed on the coast, are more liable to disease than others, especially to rough, unhealthy looking coats, hide-bound and cutaneous diseases. This, however, is as likely, and perhaps more likely to depend on a damp, cold atmosphere and bad stables, than on drinking brackish water. M. Collaine, Veterinary Professor at Milan, has observed, that cavalry corps after being some months near the sea, have been afterwards much affected with farcy. *Comte-rendu, &c. d'une Experience tentée et des Succés obtenus contre la Morve et le Farcin, par M. Collaine, Professeur a l'Ecole Royale Veterinaire de Milan.*

MINT. This is a valuable herb, and grows very abundantly. There are two kinds used in medicine, viz. *Spearmint* and *Peppermint*. The former is an excellent carminative, and generally affords relief in flatulency of the stomach and bowels, and that complaint which arises from it, termed gripes, fret, or flatulent colic.

Peppermint, however, is considerably stronger, and I think more certain in its effect. All the virtues of mint reside in an oil, which it affords plentifully by distillation; and this is the most convenient form in which it can be employed for veterinary purposes: but it requires to be highly diluted with water, with which it mixes very readily, if previously dissolved in a small proportion of rectified spirit, or rubbed in a mortar with mucilage and sugar. (See Essence.)

The dose of oil of peppermint is from twenty drops to half a dram: of spearmint from forty drops to one dram.

This is generally found a sufficient quantity, but it may be increased if it prove ineffectual.

It is necessary to distinguish carefully between those pains of the stomach and bowels which arise from inflammation, and such as are caused by spasm, or flatulency. In the former, *mint* is very pernicious; in the latter, an excellent remedy. (See vol. i. see also Carminatives.)

A solution of oil of peppermint, in rectified spirit, is sold under the name of Essence of Peppermint; one part of the oil to three of spirit is the strength at which I prescribe it. Strong infusion of the dried herb is a good vehicle for more active medicine, and with a glass or two of gin might be given for flatulent colic or gripes, when other medicine cannot be procured.

MITHRIDATE. The name of an elaborate and absurd preparation, of which *opium* was the principal ingredient. The London College have substituted for it a much neater and more efficacious formula, which they term *Opiote Confection,* which is thus made:

Powdered opium	6 dr.
Long pepper	1 oz.
Ginger	2 oz.
Caraway seeds	3 oz.

Syrup a pint. Mix.

The following is the receipt for Mithridate, *or* Confection *of* Democrites.

Cinnamon 24 drams; Indian spikenard, ginger, saffron, shepherd's purse seed, frankincense, Chia turpentine, of each 10 drams; Zedoary mace, long pepper, juice of hypocistus storax, opoponax, galbanum, opobalsam, and castor, of each 1 ounce; scordium, cubebs, white pepper, carrot seed, bdellium, of each 7 drams; celtic nard, gentian, dittany of crete, red roses, wild parsley seed, cardamoms, sweet fennel seeds, gum arabic, strained opium, dissolved in wine, of each 5 drams; aromatic reed, valerian root, sagapenum, anise-seeds, of each 3 drams; catechu, St. John's wort, skinks, of each 2 ounces and a half.

All these are to be dried and powdered, and made into an electuary, with three times its weight of honey. Theriaca Andromachi or Venice Treacle is nearly similar. These preparations are a curious contrast to the simplicity of modern preparations. (See *Opiate Confection.*)

MOSAIC GOLD. A combination of tin and sulphur, of a metallic appearance, though soft, and of a golden colour: it is not used in medicine.

MOXA. A light fibrous substance, somewhat like very fine tow. In eastern countries it is employed to remove deep-seated pains, being set on fire on the affected part so as to burn and produce an eschar: it is therefore nothing more than the actual cautery, which is much more conveniently applied in veterinary practice by means of the hot iron. (See Firing.)

MUCILAGE. The mucilage commonly employed is made by dissolving gum arabic in water. There are other cheaper gums, however, that will answer the same purpose; mucilage may be made also from quince seeds and starch. For internal use it is most cheaply and abundantly obtained from flax seed (mixed, however, with oil), or as it is more commonly named linseed. Eight ounces infused in two or three quarts of boiling water, forms a good mucilage.

MURIATES. Combinations of muriatic acid, with alkalies, earths, or metals. *Muriatic Acid* (See Acid Muriatic.) *Muriate of Antimony* (See Butter of Antimony). *Muriate of Quicksilver* (See Sublimate). *Muriate of Soda* (See Salt).

MUSK. An animal substance, remarkable for its powerful odour: in medicine it is employed as an antispasmodic; but its extravagant price has prevented veterinarians from giving it a trial.

MUSTARD. Though chiefly employed for culinary purposes, it deserves a place in our Materia Medica, both as an internal and external medicine. When flour of mustard is made into a thin paste with water, and carefully rubbed on the skin for some time, it excites considerable inflammation and swelling. This property renders it useful in cases of *internal* inflammation, particularly when the bowels or lungs are affected. This paste is rendered stronger by the addition of oil of turpentine. (See Embrocations.)

MUSTARD may be given internally with good effect, in cases which require strong stimulants.

In the village of Oakhill, where I have occasionally resided, flour of mustard is generally given with a little salt and a quart of water, in what they term a *chill*, and appears chiefly in a swelling of the udder and a change in the milk, which renders it unwholesome: but notwithstanding it is very commonly sold and made use of. The milk becomes flakey and of a yellowish colour, hence the disease is also called the *yellows*. The appetite of the animal is diminished or goes off entirely, and she appears dull and heavy, and disinclined for motion, This disease is very common, and one of great importance; because being misunderstood, it is often improperly treated, and then causes other disorders, especially one kind of red water, and what is called scouring, scantering, or scouring rot. From the cause of this disorder being generally unknown, it is one of frequent occurrence, and does almost incalculable mischief. It is in fact a disease dependant on indigestion, and that indigestion is almost wholly caused by feeding the animal upon hay. Hay, even of the best kind, is not a suitable diet for the cow, what then must be the effect when nearly all the hay with which cows are fed is absolutely void of nutriment, and indigestible? By feeding cows on bad hay, and even upon hay that is generally considered passable, a morbid condition of the fourth or sensitive stomach is gradually induced, and when existing in a certain degree, even grass may occasion indigestion, especially when it is rank or of a bad quality. Cows, whose stomachs are in this disordered condition, have often a depraved appetite, and will prefer rank unwholesome grass, or will eat the leaves from the hedges; even the poisonous leaves of the yew-tree have been eaten in this way. Mustard, therefore, or other stimulants, will often cure indigestion for the time, but the morbid condition of the sensitive stomach will remain, and consequently the tendency to indigestion. How important, therefore, must it be to remove tha cause of this disorder, and give the animal such hay only as is of the best quality. Red water, however, is not always an effect of indigestion, as I have just described; it often depends on repletion of the blood vessels, and is produced by a *change of pasture.* The remedy for this is to put the animal, as soon as the disorder is observed, into a field, where there is but little for him to eat, and not take him under cover, as is commonly done. The only remedy besides this is bleeding, to the extent of two gallons.

MYRRH. A gummy resinous substance, of a pleasant smell, and a bitter pungent taste: it is much used in medical practice, as a tonic and stimulant; and may probably be employed with good effect in horses; in weakness of stomach, diminished appetite, and imperfect digestion; in such cases it may be given with about two drams of aloes and a little soap; a little ginger also may be occasionally added: it is often joined with preparations of steel or iron.

There is a *simple* and a *compound* tincture of myrrh, sold by druggists: the former is not used in veterinary practice, but the latter is a favourite remedy with grooms and farriers, for recent wounds.

The dose of myrrh is from 1 or 2 to 3 drams.

NARCOTICS. Medicines that stupefy and procure sleep; such as opium, &c.

NATRON. (See Soda.)

NETTLE. The juice of the white blossomed nettle is employed, by some dairy men, for the red water in cows. The dose half a pint.

NIGHTSHADE. (See Deadly Nightshade.)

NITRATE OF POTASH, *Nitre* or *Saltpetre*. A neutral salt, formed by the combination of nitrous acid and potash. This is a medicine of great utility in veterinary practice, and highly esteemed both by farriers and veterinarians. It possesses a cooling and diuretic property, which renders it extremely useful in fevers, and all inflammatory complaints.

In fevers, it is often joined with emetic tartar, or antimonial powder, with good effect. In catarrh or cold, nitre is the best remedy; and in troublesome coughs it often gives relief, if mixed with some emollient drink and a little honey. (See Emollients.)

The medium dose of nitre is about one ounce, though farriers often give double that quantity, or more; but in such large doses it is apt to irritate the stomach and do mischief; therefore in urgent cases one ounce may be given every fourth hour, in which way there will be no danger of its producing that effect, particularly if it be given in a mucilaginous drink, or in water-gruel. If nitre be given in the form of a ball, it is adviseable to offer some water immediately before or after, or to wash it down with a horn-full of water-gruel.

NITRIC AND NITROUS ACIDS. Strong liquid caustics, which when diluted form a good detergent wash.

Quicksilver is readily dissolved in this acid, and forms with it an excellent caustic, which is an excellent remedy for the *footrot* in sheep. This solution may be mixed with melted lard, so as to form a strong detergent ointment, or with water in any proportion. (See Acid, Nitrous.)

NUTMEG. This well-known spice is a good stimulant and cordial medicine, but not preferable to many others that are much less expensive. (See Cordials.)

NUX VOMICA. A poisonous vegetable; the fruit or the seed of the strichnos nux vomica. A small quantity will destroy dogs, rats, or mice. It has been given to the human subject in epilepsy and dysentery, but is now rarely used, being considered a dangerous medicine. M. Collaine, Professor of the Veterinary School, at Milan, in a treatise on glanders, says, "I determined on making a final experiment with the nux vomica on two farcied horses, which I gave to the extent of two ounces a day to each of them, beginning with a dose of half a dram, morning and evening."

The ulcers on the skin became stationary, and assumed a red healthy appearance, but about the ninth day one of the horses was attacked with spasms nearly of the whole body, which induced me to put an end to my experiments and the sufferings of the animal by causing him to be shot. It is necessary to observe that these two horses, before they took the nux vomica, had taken the extract of *aconite* or wolf's bane (see Aconite), which, in the dose of one ounce and a half daily, caused considerable depression and weakness without lessening the disorder (farcy), although the same medicine had removed the disease in a horse belonging to another regiment, in less than ten days, that had the hind leg much swollen, and covered with farcy sores. This horse, however, was in consequence affected with great difficulty of breathing, which continued ten or twelve days, or until the swelling and farcy appeared again.

OAK BARK. A decoction of oak bark is a good vehicle for tonic and astringent medicines. When finely powdered and made into balls with ginger and a little oil of caraway, it may be of service in those complaints, the continuance of which depend upon debility. It is said, however, to be much less efficacious than *Peruvian bark ;* yet, when that cannot be procured, it may be found an useful substitute. The dose is about two ounces.

OATS. In the choice of oats for horses, such as are perfectly free from unpleasant or musty smell, should be preferred, also, such as are heavy and clean. New oats are injurious, rather difficult of digestion, and apt to scour; but this quality may be, in a great measure, corrected by drying them gradually on a kiln, or by giving with them a small proportion of split beans, and some clover cut into chaff: when this cannot be had, a small quantity of wheat flour may be given in the horse's water, especially if the horse already scours, and then the chill of his water should be taken off; a small cordial ball may be necessary on such occasions, if the animal has any extraordinary work to do; but under such circumstances, even moderate work might be hazardous. Nothing is more liable to produce disease in horses than being fed on musty oats, that is, oats that have been heated by being kept on board a ship, or in large heaps without being frequently turned. I have known coach and post horse proprietors suffer the most serious losses from this cause; it cannot, therefore, be too carefully guarded against, and it may be useful to such persons to be informed, that when horses are required to do such work, to suffer so much fatigue, and be so exposed to the weather, as coach and post horses commonly are, they cannot be too carefully fed and attended to; their food should be so given that digestion may go on without interruption, as many horses have been destroyed by taking them out and putting them to quick work upon a full stomach. Bruising the oats as well as the beans is a great advantage, and, upon emergencies, oat-meal, or wheat flour mixed up with a little water, will be found to afford nutriment, and refresh the animal without incumbering the stomach. (See Gruel. See also vol. i. article Stable Management and Flatulent Colic.) I am satisfied that all those cases of gripes or flatulent colic, which so often occur among post and coach horses, are brought on by indigestion; and what is so likely to cause indigestion as violent exercise upon a full stomach, especially when the food is of a bad quality, and the stomach in a morbid or weakened state, which is often the case with post and stage coach horses? When there is a necessity for using new oats, and especially when any stock of such oats are to be kept, they should be dried on a kiln very gradually. They may then be much improved, and, probably, that process may be completed which had been put a stop to by removing them from the mow.

By keeping oats or other grain in the mow a sufficient time, they appear to undergo a kind of sub-malting process, or sub-oxidizement, to use chemical language, approaching in some degree to the saccharine state; becoming thereby more easy of digestion, and more nutritious.

OILS. Oils are either *fixed* or *volatile*. The former are procured from various animal and vegetable substances, generally by means of pressure and heat, from which circumstance they have been named also *Expressed oils*; and are termed fixed, because they do not evaporate, except at a very high temperature, when they are decomposed. *Volatile oils*, on the contrary, evaporate very readily, and are generally obtained from vegetables by distillation; and as they commonly contain all the essential qualities of the substance they are procured from, they have been named also *essential oils*. The various oils are noticed under the name of the substance from which they are obtained.

The numerous officinal oils, directed in the old dispensatories, are still highly esteemed by farriers; among which are, oil of swallows, earthworms, Johnswort, spike, petre, &c.; and we frequently meet with receipts for "strain or bruise oils," in which more than a dozen different oils are ordered! Perhaps it may be an acceptable piece of information to those who place any confidence in these oils, that only three kinds are kept in the shops, from which this great variety is furnished; which are, oil of elder, oil of turpentine, and Barbadoes tar. Oil of spike is made by colouring oil of turpentine with alkanet root; oil of petre, by dissolving Barbadoes tar in the same oil: for all the other kinds, oil of elder is sold; and this is often made by colouring common oil with verdigris.

OIL OF ELDER. (See Elder.)

OIL OF BAY. This is more like ointment than an oil, of a light green colour, and smells like bay berries, from which it is procured. It is used chiefly as an external application in cutaneous complaints, such as the mange. Oil of bay is sometimes substituted for hog's lard in making mercurial ointment, and is supposed to render it more active. When to this mixture is added cantharides and oil of origanum, a strong blister is formed, which is recommended for the removal of splents and spavins. (See Blisters, Pharm.)

OIL OF CASTOR. An useful laxative. The dose is about a pint. (See Castor Oil.)

Oil of Almonds. A very sweet and pure oil, obtained either from sweet or bitter almonds, by expression.

It is used in coughs, and as a laxative for children, in medical practice; but is never required for veterinary purposes, olive oil being equally efficacious, and similar in its medical properties.

Oil of Olive. This also is a very pure and sweet oil; and in the dose of a pint generally operates as a laxative. When castor oil cannot be easily procured, this may with great propriety be substituted for it. It is used also in making emulsions, liniments, and ointments.

Oil of Linseed. This also has a laxative quality, but is not so certain in its effect as the castor or olive oil. It is employed as a remedy for coughs; and on such occasions the *cold-drawn oil* is preferred, *i. e.* that which is expressed from the seed without the assistance of heat.

Oil of Palm, or *Palm Oil.* This, though termed an oil, is of the consistence of hog's lard, and very similar to it in its medical qualities. It is of a yellow colour, and has rather an agreeable smell.

OINTMENTS. External applications composed generally of lard, suet, tallow, bee's wax, oils, resins, and turpentines. The following are those most frequently wanted and commonly kept ready prepared:

SIMPLE OINTMENT.

Olive oil	1 lb.
Bee's wax	3 oz.
Palm oil	2 oz.

Melt over a slow fire, and continue stirring until cold.

For common purposes hog's lard makes a good simple ointment, but is apt to become rancid by keeping. The simple ointment may be readily converted into a detergent or digestive.

Ointment, by the addition of red precipitate, verdigris, or blue vitriol finely powdered, and, if an astringent ointment is wanted, it may be mixed with finely powdered alum, super-acetate of lead (*sugar of lead*), or a solution of sub-acetate of lead (*Goulard's extract of lead*). The following is a very useful ointment for chopped heels, harness galls, &c.

GOULARD OINTMENT.

No. 1.	Simple ointment	1 lb.
	Solution of sub-acetate of lead, commonly called Goulard's extract (by measure.)	3 oz.
	Olive oil	1 oz.

Melt the ointment by a very gentle heat, and when melted add the oil, then let it be removed from the fire, and stir in the Goulard's extract; continue stirring until cold.

SULPHURIC OINTMENT.

Oil of turpentine	4 oz.
Sulphuric acid (by measure) ...	2 oz.

Mix cautiously in the open air, or in a chimney, in a vessel large enough to hold one pound and a half; stir the mixture, and, when they are perfectly combined, add one pound and half of hog's lard; continue stirring until cold. By the addition of cantharides, this ointment forms a strong blister, and with sulphur vivum, finely powdered, or flower of sulphur, it becomes a good mange ointment and foot oil.

DIGESTIVE OINTMENT.

Hog's lard	1 lb.
Common turpentine.	1 lb.—Melt and add
Verdigris	2 oz.

Continue stiring until cold.

HOOF OINTMENT.

Tallow	1 lb.
Tar	2 lb.

Melt, continue stiring until cold.

In concluding this article, it is right to observe, that ointments are not so commonly applied to wounds or inflamed parts, as they were formerly; and that powders, lotions, or washes, and fomentations are often found more efficacious. (See Astringents, Digestives, Detergents, Escharotics, Caustics, Emollients, Blisters, &c.)

OLIBANUM. A gummy resinous substance, sometimes used in medicine as a stimulating expectorant, but scarcely known in veterinary practice.

ONIONS. These possess a diuretic power in the horse, but are seldom used. In suppression of urine, a peeled onion is sometimes placed within the sheath, or prepuce of a horse, or vagina of a mare, with a view to excite *staling*. It is said to succeed now and then; but is certainly an absurd practice, and when the bladder is inflamed may do much injury.

OPIATE CONFECTION is composed of opium, long pepper, and other stimulants. One ounce of the confection does not contain more than fourteen or fifteen grains of opium; it may therefore be given in doses from one to two ounces, though in this quantity it would be a powerful stimulant.

In veterinary medicine the following electuary may be advantageously substituted for the opiate confection of the London dispensatory.

OPIATE CONFECTION, OR ELECTUARY OF OPIUM.

Opium . . . . 1½ oz.

Macerate in hot water until it forms with it a thin paste, or until, by stirring, it is uniformly mixed, and free from lumps.

Powdered ginger	3 oz.
Powdered caraway seeds ..	6 oz.
Powdered allspice	6 oz.
Treacle	1½ lb.

Let these ingredients be well mixed, and kept in a closed jar or pot. The dose is about one twentieth part of the mass. It is a warm cordial and diaphoretic, and may be given in flatulent colic mixed with a little warm beer, or infusion of peppermint, or other aromatic herbs. As a diaphoretic, it should be mixed with two drams of tartarized antimony or antimonial powder. This electuary is a good cordial for cattle.

OPIUM. One of the most important articles of the Materia Medica.

It is classed among the narcotic sedatives, of which it is undoubtedly the most useful.

The anodyne quality which renders *opium* so valuable in human medicine, is not so manifest when given to the horse: this I attribute to the great difference there is between the diseases of men and horses, as well as in the structure and susceptibility of the stomach and nervous system.

If injudiciously given, *opium* frequently aggravates the disease, and does much injury: and I have several times seen it increase pain, when it has been improperly given as an anodyne. In spasmodic complaints of the bowels it is an excellent remedy, particularly if joined with aromatic powder, ginger, or some other stimulant. In diarrhœa it is an effectual remedy, but must be given cautiously. In diabetes I have found it very beneficial, when joined with bark and ginger. Sometimes it is given with emetic tartar, and some cordial composition, with good effect, and in this way it proves a good diaphoretic. (See Opiate Confection.)

I have given opium and squill, in obstinate coughs, with success; but the effect is not permanent. (See vol. i.)

Opium is very apt to produce costiveness in horses; but this tendency may be in a great measure counteracted by exercise: when it does take place, it may be removed by clysters, bran mashes, or a laxative ball.

The medium dose of *opium* is half a dram, or two scruples; but if given in the form of clysters, which it sometimes is with the best effect, two drams will not be two much. (See Clysters.)

In human medicine *opium* is frequently used in the form of a tincture; and in veterinary practice it is the most convenient form. Should a liquid form be at any time necessary without spirit, a watery solution (using the sediment as well as the clear part) may be employed.

Opium is brought to this country in chests from Turkey and India. The Turkey opium is in flat pieces, covered with leaves, and the reddish capsules of some species of rumex, which is considered an indication of its goodness, as the inferior kinds of opium have none of these capsules adhering to them. Turkey opium generally contains about one fourth part of impurities. India opium is less pure, is in round masses, covered with leaves to the thickness nearly of one fourth of an inch. Mr. Kerr relates that, at Bahar, it is frequently adulterated with cow dung, the extract of the poppy procured by boiling, and various other substances. It is made also from lettuces, in India.

In Malava it is mixed with oil of sesamum, which is often one-half of the mass; ashes and the dried leaves of the plant are also used. Opium is regarded as bad when it is either very soft or friable, of an intensely black colour, or mixed with many impurities. In the human body opium is sometimes employed externally, and is said to be almost as efficacious as when taken into the stomach, producing its narcotic effects without affecting the head, or causing nausea, but in the horse it is not likely to be useful in this way. Of late years I have generally used opium in the form of a spirituous tinure, as kept in the shops, in preferance to the watery solution or mixture; there may be cases, however, in which the spirit may be improper, and then the watery mixture should be preferred. Opium is said to be decomposed by solutions of oxymuriate of mercury, acetate of lead, sulphate of zinc, iron, and copper, and that such combinations should therefore be avoided. The same objection has been applied to combinations of opium with the carbonates of potash and soda, lime water, infusion of bark, and infusion of galls; but, in combination with vinegar, the vegetable acids, and oil, its strength or narcotic power is said to be much increased. That celebrated preparation of opium, named the black drop, is an example of this. The following is the formula for making it, according to Thomson.

BLACK DROP.

Opium sliced	½ pound.
Good verjuice	3 pints.
Nutmegs	1½ oz.
Saffron	½ oz.

Boil them to a proper thickness, then add a quarter of a pound of sugar and two spoonsfull of yeast. Set the whole in a warm place near the fire for six or eight weeks, then place it in the open air until it becomes a syrup; lastly, decant, filtre, and bottle it up, adding a little sugar to each bottle. One drop of this is said to be equal to three drops of the tincture of opium. Opium is often combined with emetic tartar and ipecacuana in human medicine, in which state it acts as a sudorific as well as anodyne; this combination is employed also in veterinary medicine, but is not so decidedly useful as in the former. The diseases of the horse, in which opium is most beneficial, are locked jaw and flatulent colic; in the former it has been given in large doses, with the best effect, generally joined with camphor, and sometimes with assafœtida and other antispasmodics. In flatulent colic smaller doses have been found sufficient, which have generally been joined with sweet spirit of nitre, and other carminatives. (See vol. i. 12th Edition; see also Opiate Confection, remarks on.) The medium dose of the tincture, prepared according to the London dispensatory, is one ounce, and of solid opium *purified* half a dram. Half an ounce of purified opium, according to Boardman, was given to a horse at one dose; he slept through the daytime for eight or nine hours, and could not be easily roused. In locked jaw, the same author prescribes three drams of purified opium every three or four hours, with camphor and salt of hartshorn, of each half an ounce. But Mr.

Wilkinson, who has succeeded in twenty-four cases of locked jaw, gave only one dram of common opium, with the same quantity of camphor and assafœtida: but he gradually increased the dose, and went, in some cases, so far as two or three drams. The mode of purifying opium, prescribed in the London dispensatory, is to dissolve it in proof spirit, then filtre the solution, and evaporate in a water bath to the required consistence; but a more ready way, though not so effectual, is to dry it carefully by a moderate heat, powder and sift it. The sieve will keep back many of the impurities, when this is carefully done. Opium is an article of so much importance, that it appeared necessary to notice it particularly, and at some length. There is a vinous tincture of opium sometimes used in diseases of the human eyes. I have found nearly a similar preparation very useful in chronic inflammation of the horses eye, applied undiluted. (See vol. i.) It is made by digesting or dissolving two ounces of opium in a pint of sherry wine, or any good *old* white wine: probably diluted brandy would do just as well. The following is a good formula for tincture of opium, when it is wanted for flatulent colic, locked jaw, or other spasmodic diseases of the horse.

TINCTURE OF OPIUM.

Opium	½ oz.
Cinnamon, cloves, and ginger, of each	1 oz.
Old rum or brandy	1 pint.

Macerate for ten days or a fortnight, often shaking the bottle, then press off the liquid part, and filtre or strain through blotting paper. The dose from one to two ounces. The following is a good formula for an opiate powder, which may be given occasionally in a little warm beer, or some aromatic tea, or infusion, such as peppermint, pennyroyal, rosemary, &c.

OPIATE POWDER.

Powdered opium	1 oz.
Cassia, Jamaica pepper, and ginger powdered, of each	2 oz.
Caraway-seeds and anise-seeds, of each	4 oz.

Mix. The dose six drams to one ounce.

OPODELDOC is made by dissolving soap and camphor in spirit of rosemary. It is either liquid or solid, according to the proportion of soap. In the solid state it seems to be the same as the celebrated *Steers's opodeldoc*. (See article Embrocations.)

It is employed for strains and bruises, and is a very proper application when the inflammation, which always accompanies those complaints at first, has subsided. (See vol. i.)

Liquid Opodeldoc or Soap Liniment.

Soft soap	4 oz.
Water	8 oz.

Mix, and add to the mixture one pint of rectified spirit of wine, in which there has been previously dissolved,

Camphor	2 oz.
Oil of rosemary	1 oz.

Steers's Opodeldoc.

Hard soap	4 oz.
Rectified spirit of wine	8 oz.
Camphor	½ oz.
Oil of rosemary	2 dr.
Oil of Lavender or oil of origanum	2 dr.
Compound spirit of ammonia	4 oz.

Digest in a moderate heat so as to dissolve the soap, which should be cut up in thin shavings. These preparations are expensive, therefore the following may be substituted for them.

Veterinary Opodeldoc.

Soft soap	4 oz.
Water	8 oz.

Mix over the fire; when cold add

Rectified spirit	1 pint.
Oil of rosemary	2 oz.
Strong liquid ammonia	4 oz.

Mix. (See Embrocations and Liniments.)

OPOPONAX. A gum resin, nearly resembling *galbanum* in its medical qualities, though so much inferior that it does not merit any notice as a veterinary medicine.

ORIGANUM. The essential oil of this plant is much used by farriers, as an ingredient. in their strain oils, or mixtures for bruises. It is a very powerful stimulant, and capable of doing much harm in those complaints: it is sometimes mixed with mercurial ointment, oil of bay, and cantharides, to form strong *blisters.* (See Blisters.)

ORPIMENT. (See Arsenic.) In Markham's master piece, and some other old books on farriery, the nostrils of glandered horses are directed to be fumigated with yellow arsenic made into pastils or cakes, with frankincense and elecampane; some apparent cures are said to have been effected in this way, but probably the running was only suspended a short time; and we know enough of the disease to be satisfied that the cases, supposed to have been thus cured, either were not really the glanders, or that it was only a temporary removal or stoppage of the discharge from the nostrils. The fumigation of the nostrils, with yellow arsenic, is not only ineffectual in glanders, but likely to prove injurious both to the patient and the operator. Yellow arsenic, made into an ointment with lard, has been recommended for warts, but it is a very dangerous application; and besides warts can always be effectually and safely removed by the knife from any part of the body.

There is a secret method of curing fistula, poll-evil, and quittor employed by certain farriers, which often cures, and often does much injury. Their remedy is orpiment mixed with lard. The cures they make are always made known, but the mischief they do escapes notice, or is concealed. Lunar caustic or blue vitriol and the knife will accomplish, with safety and certainty, all that can be accomplished in those diseases.

Poll-evil is caused by mange, which makes the horse rub his head, and often hurt it by blows against the manger, by which the first bone of the neck becomes diseased. The cure, therefore, requires time.

OYSTER-SHELL, when burnt and levigated, is employed as an *absorbent.*

The dose is about one ounce.

OXIGEN. A constituent part of atmospheric air, without which it would be unfit for respiration. In breathing the air is rendered impure by the exhalations from the lungs, and, at the same time, we deprive it of this pure and vital principle: it is therefore unfit for the purpose a second time: and if an animal be confined in air that has been once respired, life is almost instantly extinguished. Hence may be inferred the necessity of ventilating stables: for although in close stables the air is not wholly deprived of oxigen gas, yet its proportion is considerably diminished: and it is well known, that when there is a deficiency of this animating principle, the system is debilitated, and all its functions imperfectly performed.

OXIDE or OXYD. The calxes of metals are now termed *oxides*, on account of their containing a certain proportion of oxigen (the acidifying principle); but not sufficient to give them the properties of an acid—the term *oxyd*, signifying an imperfect acid. But this subject more properly belongs to a chemical work.

OXYMELS. Syrups which, when made with honey and vinegar only, are termed *simple oxymels;* when squill, garlic, or meadow saffron has been previously infused or digested in the vinegar, it is named oxymel of squill, of garlic, or of meadow saffron. They are sometimes employed in chronic cough. The dose about four ounces mixed with water, or infusion of linseed, or marshmallows. (See Expectorants, and vol. i. article Chronic Cough, in the 12th Edition.)

OXYMURIATE OF QUICKSILVER or *Mercury*. (See Sublimate Corrosive.)

OXYMURIATE OF POTASH. An expensive preparation not used in veterinary practice; it has been employed, however, in human medicine, in syphilitic cases, and scurvy; but seems now to have fallen into disrepute. How far it may be worth a trial in horses is uncertain, but the expence is an important objection to its use.

PALM OIL. (See Oil of Palm.) A yellow or orange coloured unctuous substance, of the consistence of butter, and of a pleasant odour. An imitation of it is sometimes sold, made with hog's lard, turmeric, and orrice powder. It is used as an emollient ointment, and probably is not preferable to lard.

PAREGORIC ELIXIR, or camphorated *Tincture* of *Opium.*

Opium	1 dr.
Flowers of benzoin	1 dr.
Camphor	2 scrup.
Oil of anise-seed	½ dr.

To be dissolved in proof spirit 2lb.

In human medicine this is employed in coughs, but it is unfit for veterinary purposes.

PARSLEY. The root diuretic: the seeds a weak carminative.

PARSLEY, Macedonian, nearly the same; rather stronger.

PEARL ASHES. Carbonate of potash in an impure state. (See Potash.)

PEARL BARLEY. Barley deprived of its cuticle or shell. (See Gruel.)

PEAS. A nutritious food for horses, especially when bruised and mixed with oats and *cut clover hay*, commonly called *chaff*. (See Chaff.) Beans are generally preferred. Pea-meal is employed to adulterated horse-powders, particularly liquorice-powder, anise, fenugreck, &c.

PECTORALS. Medicines that relieve cough, and disorders of the lungs. (See Expectorants, Emollients, Emulsions, and Demulcents.)

PELLITORY OF SPAIN, the root. This is used chiefly to relieve the tooth-ache, and pain about the jaws; which it does by causing a copious discharge of saliva, when kept in the mouth a short time. It is not necessary in veterinary practice, but is included in Gibson's Farrier's Dispensatory, and probably sometimes used by him in the composition of masticatories. (See Chewing Balls, Veterinary Dictionary.)

PENNYROYAL. The essential oil of this herb possesses a carminative power, but is very inferior to that of *peppermint*. A strong infusion may be employed as a vehicle for carminative medicine, when nothing more effectual can be obtained.

PEPPER, BLACK. This is often used by farriers in the colic, but is by no means an eligible remedy, and is often given very improperly. I once knew a farrier give two ounces, in half a pint of Daffy's Elixir, to a mail-horse, that was said to be attacked with gripes; and he condesended to give me the following *scientific* explanation of the manner in which it was to act. "*The pepper is to break the wind, and the Daffy's Elixir is to drive it out.*" In the evening the horse died. I mention this circumstance as a caution to those who are too fond of giving those very hot remedies in pains of the bowels, without inquiring into the nature of the complaint. (See vol. i. in which are plain directions for distinguishing between flatulent and inflammatory colic; see also Carminatives.)

PEPPER, CAYENNE. (See Cayenne Pepper.)

PEPPER, LONG, is rather stronger than black pepper.

PEPPER, JAMAICA. (See Jamaica Pepper, or Allspice.)

PEPPERMINT. (See Mint.)

PERUVIAN BALSAM. (See Balsam of Peru.)

PERUVIAN BARK. (See Bark.)

PERIWINCLE, *Major* and *Minor*. According to Bourgelat, these are employed in sore throat or quinsy, in decoction mixed with honey and vinegar. M. Malouin formerly asserted that the greater periwincle, powdered and mixed with Ethiop's Mineral, was a specific against glanders. In hot climates the plants of this genus are said to acquire poisonous qualities. PETROLEUM. (See Tar, and Barbadoes Tar.)

PEWTER. A composition of lead and tin. I have been informed that scrapings or filings of pewter is a good anthelmintic in dogs. The dose, as much as will lay on a shilling, or about a dram. It is asserted that a man has taken a dram, for two successive days, without suffering the least inconvenience.—Gray's Supplement to the Pharmacopœias.

PHOSPHORUS. A very combustible substance, made either from bones or urine. Experiments have been made at the Veterinary College to ascertain its medical qualities: it proved to be a dreadful poison, inflaming the stomach in small doses.

PHYSIC. (See Cathartics.)

PIMENTO. (See Allspice and Jamaica Pepper.)

PINK ROOT. (See Indian Pink.)

PITCH. A black and impure resinous substance, used by farriers in making *charges*, obtained by boiling or distilling tar to the desired consistence. (See Burgundy Pitch.)

PLAISTER OR PLASTER. A composition of wax, resin, &c., or of oil boiled with the oxide of lead or litharge. (See Diachylon and Charge.)

Plaister, adhesive, or Sticking-plaster: this is made with diachylon and a small proportion of resin, and still less of common turpentine, or with diachylon and galbanum. Sticking-plaster is sometimes employed to keep the edges of a fresh wound together; but in horses this is generally done more effectually by suture, that is, by sewing up the wound. (See vol. i.)

POMEGRANATE. The dried fruit is a moderately strong astringent; and is sometimes employed in diarrhœa, particularly in horned cattle.

The dose is from half an ounce to an ounce.

It may be joined with alum, ginger, and other auxiliaries, and occasionally with opium.

POPPY. The heads of *poppy* dried make a good fomentation for wounds and tumours that are in a painful or irritable state: for which purpose they are to be broken in pieces, and boiled in water, so as to make a strong *decoction.* This decoction proves very serviceable in irritability of the bladder, if used as a glyster, the bowels having been previously emptied: for this purpose the decoction should be made stronger, by boiling it for some time.

It seems very probable that the good effect of this decoction depends in a great measure upon the opium which is extracted from the poppy heads: it may be better, therefore, to dissolve in gruel *a proper dose* of opium, when an anodyne glyster is required, as we cannot be accurate in respect to quantity when the decoction of *poppies* is employed. It has been ascertained that the anodyne or narcotic qualities of opium are diminished by long boiling, and that the extract of poppies, however carefully prepared, is very inferior in every respect to opium. No hesitation therefore should be felt in prefering opium to the extract or decoction of white poppy heads, whether it be wanted for a clyster, a drench, or a fomentation

POTASH, *Potassa, Carbonate of, Prepared Kali*, or the *Vegetable Alkali*. The potash of commerce is in a very impure state, and not applicable to chemical or medical purposes. When properly purified, it is joined with *purgatives* and *tonics*, with advantage. In those cases which require the use of *tonics*, there is sometimes an acidity in the stomach, which potash corrects; and it renders purgative medicines more easy of solution. Given alone it generally acts as a diuretic. When neutralized with acids, it has a laxative property, but requires to be given in large doses. With sulphuric acid it forms vitriolated tartar, or sal polychrest (*sulphate of potash*); with nitrous acid, that very useful medicine termed nitre (*nitrate of potash*), which, contrary to what we have just observed, is a diuretic in a moderate dose (see *Nitre*); and with vinegar, or acetous acid, it makes soluble tartar (*tartarized kali.*) The purified potash is named in the shops *prepared kali;* but formerly salt of tartar, or wormwood. When potash is deprived of the carbonic acid with which it is naturally combined, it becomes a strong caustic; and when diluted is sometimes employed as a wash for the mange. In this state it is termed *pure potash* or *kali*, and is seldom used internally. (See Alkalies.) When saturated with carbonic acid it is named *super carbonate of Potash*, and is the best preparation for internal use, but more expensive than the others.

POULTICE or *Cataplasms*, are useful applications for promoting suppuration in inflamed tumours, and in those diseases of the horse's heels, named grease, scratches, cracks, &c. consisting in inflamed swellings of the heels, fœtid discharge, painful and troublesome ulcers, or cracks generally under the fetlock or bend of the heel. The poultices commonly employed on those occasions are of the emollient kind.

Emollient Poultice.

No. 1.	Linseed meal	½ lb.
	Bran	1 qr.
	Hog's lard	4 oz.

Boiling water enough to make a soft poultice.

No. 2. Turnips, thoroughly boiled and mashed; any quantity. Linseed meal enough to form the poultice.

Either of the simple poultices may be converted into an anodyne poultice by the addition of opium; into a fermenting poultice, by the addition of yeast, and by substituting oatmeal for linseed meal; into an astringent poultice, by the addition of Goulard's Extract, sugar of lead, or powdered alum; and into a detergent poultice, by the addition of white or blue vitriol.

In obstinate cases of virulent grease, where there is much pain, and a stinking dark coloured discharge, and especially when emollients are found ineffectual, the detergent poultice has quickly cured the disease, and in such cases even a solution of corrosive sublimate has been used with the best effect. But emollients should always be first applied, and some diuretic medicine given. (See vols. i. and iii.)

POWDERS. This is sometimes a convenient form for giving medicines, as many horses will take them in their corn without reluctance. It is by no means proper, however, for such as have a delicate appetite and are remarkably nice in feeding; for although they may after some time eat their food, yet the reluctance with which it is taken would prevent its being readily digested, or proving so nutritious as it would do, were it not so medicated.

Some horses, however, eat their corn very readily when mixed with powder; and to such it may be given without inconvenience. There is another objection to this mode of giving medicine, which is the difficulty of ascertaining whether the whole or not, or how much of the powder that is mixed with the corn, is taken. But this may in a great measure be done away, by sprinkling the corn with water, and mixing the powder with it very carefully. As we have before observed, whenever a horse appears unwilling to eat his corn thus medicated, the medicine should be given in some other form. The medicines best suited to this purpose are antimony, sulphur, resin, emetic tartar, nitre, anise-seeds, &c. Medicines that are given in the form of powder, should be finely sifted, or levigated; and when kept in that form, a well corked bottle is most proper for the purpose.

PRECIPITATE, RED, *Nitric Oxide of Mercury*, or *Red Nitrated Quicksilver*. This is extremely useful as a mild caustic or detergent, and has an excellent effect in foul ulcers. It may be used either alone, being finely powdered and sprinkled on the affected part, or mixed with various ointments. (See Detergents.) It is made from quicksilver and nitrous acid, but is considerably weaker than a solution of that metal in nitrous acid. It becomes, however, a strong and very efficacious caustic, when dissolved in nitrous acid; in which state, by proper dilution, it cures fistula, poll-evil, and canker. This solution may also be mixed with unctuous substances, forming with them good detergent ointments; or it may be diluted with water so as to form a detergent lotion of considerab'e efficacy

PREPARED KALI. (See Potash.)

PROOF SPIRIT. Equal parts of rectified spirit of wine and water. (See Alcohol.)

PRUNELLA, SALT. The same as nitre, or nitrate of potash. A cooling diuretic and febrifuge. The dose about one ounce, once or twice a day. (See Febrifuges, Alteratives, and Diuretics.)

PURGATIVES. (See Cathartics.)

PURGING BALLS. (See Cathartics.)

PUFFBALL. The dust of puffball is sometimes used to stop bleeding; but nothing of this sort should be depended upon when the bleeding is considerable, *pressure* being much more effectual.

QUASSIA. A powerful bitter, and a good medicine in cases of weakness of the stomach. It is generally given in powder, in doses from one to two or three drams, joined with ginger, or some other stimulant, and a small quantity of soda or potash.

QUICKLIME. (See Lime.)

QUICKSILVER. This metal and its preparations have been noticed under the head *mercury*. I have only to observe here that on reflecting upon the injurious effects of those preparations, especially sublimate, that the most simple preparation, such as the quicksilver pill, blue pill, or something analogous to it, and that two in very small doses, may produce all the good effects that have resulted from the use of sublimate. When sublimate, or even calomel, is given daily in what is commonly considered a moderate dose, and continued for some time, the stomach and muscular system are often materially injured, and the kidneys have been found partially disorganized; that is, enlarged, of a pale colour, and becoming rotten. Such preparations deserve a further and more careful trial than they have hitherto received. Small doses of the hydrargyrus cum creta, that is, quicksilver and chalk rubbed together in a mortar until the globules disappear, or quicksilver rubbed in the same manner with mucilage of gum arabic, may be given in every feed the horse takes, in a very small quantity, so as to impregnate the blood with mercury without disordering the stomach, or materially deranging the kidneys or muscular system. I am of opinion that this method of exhibiting mercury deserves a trial in glanders, and should an opportunity offer I intend to avail myself of it.

I have reason to believe that those mild preparations of quicksilver or mercury, in which the metal appears to be reduced to that state of minute division as to lose in a great degree, or wholly, its metallic appearance, may be employed with the best effect, and in small doses, in those diseases in which sublimate is now considered the only effectual remedy. Though large doses of sublimate have been given in experiments on glandered horses, and sometimes without apparent ill effect; yet even in the doses which are generally given in farcy, that is, about ten grains, it is capable of doing the most material injury; producing effects which are not visible until they are incurable. If these mild preparations of quicksilver can accomplish all that can be accomplished by sublimate, and I am satisfied they can, in the farcy as well as the glanders, for I do not consider the latter as an incurable complaint, they ought surely to be fairly tried, and then I think they will be found effectual. Ethiop's Mineral, now named *black sulphuret of mercury*, I am inclined to believe is the best and certainly the mildest preparation that can be employed, though generally considered nearly inert. If *one dram* of Ethiop's Mineral be given in the horse's food once or twice a day, it will gradually be absorbed into the circulation, and effect all that can be accomplished by mercury in any of its forms. (See *Mercury*.)

RAGWORT. A flowering plant that grows principally on moors and other moist situations. I have been informed that it causes lethargy or sleepy staggers in horses, and that sheep eat it freely without injury: there is no probability in this opinion.

RAKING. A term employed by farriers for an operation which consists in introducing the hand into the horse's *rectum*, and drawing out any hard excrement that may lodge there. This may generally be effected more to the purpose, and with greater ease to the animal, by means of clysters.

In some cases, however, the straight gut is so loaded with hard dung that *raking* is a necessary operation; and it is sometimes difficult or impossible to throw up a clyster before it is done. The operation is useful also for the purpose of ascertaining the state of excrement when none can be found about the litter; whether it be soft, hard, or slimy. The only method of knowing whether the urinary bladder is full and distended, or empty, is by introducing the hand into the straight gut, where the bladder can be easily felt, as it lies immediately beneath the gut next to the belly or abdomen. The nails should be pared smooth, and the hand oiled or smeared with hog's lard, before the operation is performed. (See Clysters; also vol. i. Twelth Edition.)

RATTLESNAKE ROOT. This root possesses considerable power as a tonic and stimulant, and may be employed in the dose of three or four drams..

REALGAR. A natural combination of sulphur and arsenic, not used as a medicine. (See Arsenic and Orpiment.)

RECTIFIED SPIRIT. *Aikohol*, or *Spirit of Wine.* This is obtained in a dilute state from fermented liquors by distillation, and is afterwards rectified or concentrated, by repeating the operation two or three times. Rectified spirit is the basis of many useful embrocations, for strains, bruises, &c. It dissolves camphor and all the resins very readily: hence we have camphorated spirit, opodeldoc, Fryar's balsam,

&c. Mixed with an equal quantity of water it forms what is termed proof spirit, which is the liquid generally employed for making tinctures. *Rectified Spirit* is often used alone as an embrocation for strains; and, when the injury is deeply seated, may be serviceable. I think, however, it is rendered more efficacious by the addition of camphor, or oil of rosemary. Rectified spirit is never employed as an internal remedy in the horse; though fermented liquors, such as beer, porter, or wine, have been often given with great advantage, in cases which required cordials. Horses, that have been so fatigued with a long chase or journey as to refuse their food and appear quite exhausted, are much refreshed by taking a cordial ball in a pint or more of beer, and feed soon after with great alacrity. The advantage thus derived is not merely temporary, as they are by this treatment rendered adequate to another chase or journey much quicker than they would otherwise be. (See Cordials, Gruel, and Restoratives.)

It may be asked, why diluted alkohol, or rectified spirit, is not equally useful, since it is the essential principle of all fermented liquors? The reason is this: When rectified spirit is diluted with water to any degree the combination is so weak that it readily separates, and attaches itself to the sensitive part of the stomach, acting on it in some degree as rectified spirit: whereas in fermented liquors, the spirit and water are so intimately united, that the heat of the stomach is not sufficient to separate them. This may be proved by experiments out of the body, and sufficiently accounts for the difference we observe between the action of diluted spirit and fermented liquors in the human stomach; but in the horse great part of this organ is covered by an insensible membrane, so that we cannot be guided by analogy; and as spirit has never been fairly tried on this animal, it may be worth while to make some experiments on the subject; that is, in certain cases, such as spasmodic colic, &c., in which rum, brandy, or gin may be tried, properly diluted. Daffy's Elixir is of this kind, and though much more expensive than gin, is certainly not more efficacious. This celebrated elixir is often employed by grooms and farriers in flatulent cholic, gripes, or fret, and sometimes with good effect; but a less quantity of gin, rum, or brandy diluted, would do much better.

I once gave six ounces of brandy, diluted, with the best effect, to a horse that was once done-up in a journey; it enabled him to continue it, without any apparent inconvenience.

REGULUS OF ANTIMONY. Common or crude antimony, deprived of its sulphur, and brought to a metallic state. It is never used as a horse medicine.

REPELLENTS. A term given to applications or medicines that are supposed to have the power of causing tumours or eruptions to recede from the surface of the body.

Thus inveterate cases of mange and grease, when cured by sublimate or other powerful applications have been supposed at times to have been *repelled*, or driven to the eyes, the lungs, or the bowels, bringing on probably a fatal inflammation of those parts; that is, of the two latter.

This opinion is questioned, or rather doubted by some modern practitioners, and should certainly be received with caution, and with considerable limitation. I have known several bad cases of virulent grease cured by means of sublimate and blue vitriol, and of inveterate mange by sulphur, turpentine, oil of tar, &c., without being followed by any internal disease; and I have known instances, particularly two of inveterate mange, which were followed by inflammation of the bowels. In all such cases, therefore, it will be most prudent to give the horse bran mashes and some alterative laxative or cathartic medicines, previous to the exhibition of such remedies; and the application may at first be rather weak, and the strength gradually increased, or rowels may be inserted in the thigh in cases of grease. (See vol. i. Mange and Grease.)

RESINS are distinguished by their inflammability, and by combining readily with rectified spirit and oils. They are generally solid, and immixable with water. (See Rosin.)

RESOLVENTS. Medicines that disperse tumours, either external or internal.

RESTORATIVES. Medicines that restore the strength of the body after violent fatigue or illness. For this purpose a light and nutritious diet, assisted by good grooming, and exercise proportioned to the strength of the animal, is generally the only thing necessary; sometimes, however, it may be proper to give also some cordial or tonic medicine. (See *Tonics*, *Cordials*, and *Stomachics*) The food on such occasions should consist of bruised oats, gruel, mashes of fine sweet bran and malt, gruel of wheat flour, or boiled barley. In India strong broths or soup, thickened with barley or some other grain, and rendered stimulating by spices, is frequently given as a restorative to horses when worked hard; perhaps good mild beer or ale, mixed with good gruel made of grotts or oatmeal, or what is still better, fine wheat flour, would be found an effectual restorative.

RHAPONTICA. A species of rhubarb.

RHEUM OR RHŒUM. (See Rhubarb.)

RHUBARB. Rhubarb is sometimes employed with aloes and ginger as a stomachic purgative. The dose is from half an ounce to one ounce.

RICINUS. The fruit from which castor oil is expressed.

ROBORANTS. Medicines that strengthen the system.

ROSEMARY. The essential oil of rosemary forms an excellent embrocation for strains and bruises, if mixed with rectified spirit and soap. This mixture is nearly the same as the celebrated *opodeldoc;* and by the addition of camphor becomes the same thing. Oil of rosemary has been given in the flatulent colic or gripes with good effect, but requires considerable dilution. (See Carminatives.)

The dose is from half a dram to one dram; or more.

ROSES. The buds or petals of the red roses have a weak astringent power. Infusion of roses with a small proportion of alum or sulphuric acid, and sweetened with honey, is sometimes employed in cases of inflamed mouth and gums. The petals of the damask rose possess a weak laxative quality without any astringency.

ROSIN OR RESIN, yellow and black. The former is a weak diuretic, and sometimes given with advantage to horses that are subject to swelling of the legs. The dose is about one ounce, which may be powdered and mixed with the corn: it is necessary to continue this medicine for several days, or until its diuretic effect is considerable. Black rosin is not used in medicine. (See Alteratives.)

ROWELLING. An operation often performed in veterinary practice. It consists in making an incision in the skin, about an inch in length, with a pair of short and strong bladed scissars. The finger is then introduced, in order to separate the skin from the subjacent parts all round the incision, that the cavity may contain a circular piece of leather about an inch and a half or two inches in breadth. Before this leather is introduced, a hole is made in the centre about half an inch in diameter: it is then covered with tow (the hole being left open), and smeared with digestive ointment: when the rowel is put in, the hole in the middle of the leather is plugged up with a little tow.

In this situation it is left until matter forms, which generally happens in two or three days:

the plug of tow is then withdrawn, and the matter suffered to flow out, in which state it remains as long as is thought necessary. Thus we see that a rowel is an artificial abscess, the leather first causing *inflammation*, which ends in *suppuration* or the formation of matter; and the matter continues to be formed as long as the extraneous body or leather remains under the skin.

The intention of rowelling is to divert inflammation from any important organ or part of the body. Thus, when the lungs are inflamed, the animal certainly dies, unless it is put a stop to; but the skin may be inflamed to a considerable extent without danger: we therefor put *a rowel* in the chest, which, though not sufficient of itself to stop the inflammation of the lungs, contributes materially to it, and with the other necessary remedies often effects a cure. In large swellings of the hind legs, and obstinate cases of grease, *rowels* in the thighs are good remedies.

In shoulder strains, a *rowel* may be put in the chest with good effect. In short, whenever inflammation attacks an essential and important part of the system, much benefit will be derived from inserting a *rowel* in some contiguous part that is of little importance. When a *rowel* is removed, the part generally heals of itself; if not, a little Fryar's balsam may be applied.

Many practitioners consider blistering the sides extensively as a more effectual means of diverting inflammation from the lungs than rowels, and I am inclined to think they are right. Plentiful bleeding, however, on the first attack of the disorder, to the extent of five, six, or even seven quarts, will generally render both of them unnecessary. The rowel is sometimes smeared with blistering ointment instead of digestive: but there is danger of the cantharides being absorbed and causing inflammation of the kidneys. I have known a horse destroyed in this way. In all cases of internal inflammation, very little can be accomplished either by rowels or blisters. It is from plentiful bleeding alone that relief can be obtained, not by taking off a precise or determinate quantity, but by continuing to draw the blood as the horse is relieved, or until he becomes faint. This is particularly to be attended to in that disorder which is commonly called a *chill;* but which is in fact a violent inflammation of the muscles of the shoulders, the loins, and other parts of the body, sometimes extending to the diaphragm, and even to the heart, the lungs, and other internal organs, and not unfrequently translated to the feet. (See vol. i. 12th edit. article Founder.)

Now in this disorder the name *chill*, or the misconception of the nature of the disease, which commonly obtains among grooms and farriers, has led to the very injurious practice of giving stimulants or cordials; whereas nothing but copious bleeding, repeated as often as it may appear necessary, or until relief is afforded, can do any good. The auxiliary remedies are a *laxative* ball and clysters, unless the bowels are already open, and giving frequently bran or white water with the chill taken off; and when the bowels are open, small doses of nitre, or balls of nitre and camphor, may be given. (See the Veterinary Dictionary, article Chill.)

Whenever it is thought necessary to make the ointment which is used in rowelling more stimulating, it may be easily done by adding oil of turpentine to it.

RUBEFACIANTS. A term in human medicine, applied to compositions or simples that redden or inflame the skin. Of this kind are mustard, turpentine, and liquid ammonia. (See Embrocations.)

RUE. This plant has been recommended as an anthelmintic: but whatever its virtues may be in the human body, it has, I believe, no effect of this kind on the horse. It has lately been recommended in locked-jaw as a vehicle for opium, camphor, and assafœtida, in the form of decoction. It may possess some power as an antispasmodic, but certainly is very inferior to many others. Gibson often prescribes it, but generally as a vehicle for other more active medicines. Many farriers still employ rue in farcy with soap and other diuretics, which they give in large doses; it is used also as a fomentation.

SACCHARUM SATURNI. (See Sugar of Lead, Acetate of Lead, and Lead.)

SAFFRON was formerly thought a good cordial medicine, and frequently employed as such; but at this time medical practitioners seem to think it destitute of any medical virtues. It is still retained, however, in their Pharmacopœias, probably on account of its elegant yellow colour and fragrant smell. As a horse medicine it is certainly not worth notice, though sometimes prescribed in cordial medicines.

There are two kinds of saffron kept in the shops, viz. hay saffron and cake saffron. The former is to be preferred, as the latter is always adulterated.

SAGAPENUM. A gum resin, similar to, but weaker than, assafœtida.

SAGE. A plant not used in veterinary practice.

SAGO. A farinaceous substance, which, when boiled in water, is a proper drink for sick horses that are incapable of feeding. (See Gruel.)

ST. JOHN'S WORT. A plant not used in medicine, though formerly supposed to possess many virtues. The oil of St. John's wort sold by druggists, is nothing more than the common green oil, which is sold under a variety of names. (See Oils.)

SAL AMMONIAC, or *Muriate of Ammonia.* A neutral salt, which, when dissolved in vinegar and water, forms a good embrocation for strains and bruises.

Osmer, an old veterinary author, prescribed it for a distemper or epidemic catarrh in horses, that prevailed in the year 1750, in a dose of one ounce, joined with one ounce of nitre, half an ounce of Castile soap, and two drams of camphor, to be given three times a day. This, I should think, would operate not only as a powerful diuretic, but would be liable to irritate the stomach in a dangerous degree. (See vol. i. and vol. iv. article Distemper.) It is a medicine I have never given internally, not considering it either so safe or so efficacious as nitre.

SAL INDUS. A saline substance of a reddish colour and very unpleasant smell, lately (1800) brought from the East Indies, and strongly recommended as a remedy for that species of worm called *botts:* I have not found it, however, capable of destroying those worms or expelling them; though it will sometimes discharge common worms, particularly if assisted by aloes. The dose is from two to four ounces, with a pint of water. It appears to differ from common salt only in being combined with a small proportion of liver of sulphur, or sulphuret of potash.*

SAL POLYCHREST, *vitriolated Kali*, or *Sulphate of Potash*, sometimes given with aloes as a laxative or cathartic.

SAL PRUNELLA. This salt is made by melting two pounds of nitre in a ladle or crucible, and adding to it, while in that state, one ounce of flower of sulphur. A deflagration or combustion immediately takes place, and as soon as that ceases it may be poured into moulds or upon a marble slab. By this operation a chemical change is effected, and the result is a mixture or combination of nitrate and sulphate of potash; in other words, sal prunella consists of nitre and sal polychrest, or sulphate of potash.

SAL VOLATILE. This term is promiscuously applied to compound spirit of ammonia, and prepared ammonia, or smelling-salts; but the former is often distinguished by the name "*spirit of sal volatile.*"

---

* Since writing this article, I have had the pleasure of announcing that botts may be cured by common salt, given in a particular manner. The method of giving it is taken from a book by Gervase Markham, ublished in 1666, named "Markham's Masterpiece." (See vol. iii. 5th Edition). I understand that sal indus is the common salt of India, and commonly employed in that country as a remedy for botts.

SALTS. There are three kinds of salt, viz. the acid, the alkaline, and that which is formed by the combination of these, *i. e.* the neutral. (See Acids, Alkalies, and Neutrals.)

SALT, COMMON, or *Sea Salt.* This is the most useful of all neutral salts for veterinary purposes, nitre excepted.

In doses from four to six ounces it generally operates as an easy and effectual laxative; and when there are worms, if assisted by a small dose of aloes, it frequently expels them.

It is extremely useful in laxative glysters (See Pharm.), and considerably promotes the operation of castor oil: even oil of olives, linseed, or any common oil, will form a good laxative with a solution of common salt: hog's lard melted and new butter have been sometimes employed in this way, and buttermilk and whey have been found useful as laxatives.

Small doses of common salt are very beneficial to sheep and other cattle. When properiy administered to those animals, it improves digestion, and thereby prevents the formation of worms in the bowels, the liver, and in many other parts where their existence is seldom suspected. (See Anthelmintics.) When given more largely as a laxative or carthartic, it may prevent, or assist in curing, the inflammatory diseases so often produced by the luxuriancy of those pastures which have been brought into a state of high cultivation. And here it may not be amiss to observe that *copious bleeding* in such cases is a practice of the most effectual kind, though generally neglected, or considered improper. There is no difficulty in bleeding sheep with a fleam or lancet, without cutting off any wool. It is done in the same manner as in cows. I have seen a great number bled with good effect. The quantity taken off was about a pound. A few of them became faint before that quantity had been lost.

SALT PETRE. (See Nitre.)

SALT OF STEEL, *Sulphate of Iron*, or *Vitriolated Iron*. A combination of sulphuric acid and iron. This is by no means so remarkable for its *tonic* power in the *horse*, as in the human subject; but it is said to possess this quality, and is often given in doses from two to four drams. I have several times employed it in cases that appeared to require tonic remedies, but with little effect. (See Iron.)

SALT OF TARTAR, *Carbonate of Potash.* (See Potash and Alkalies.)

SALT OF WORMWOOD, *Carbonate of Potash.* (See the same.)

SARSAPARILLA. A root not used in veterinary medicine.

SASSAFRAS. The only part of sassafras that can be of use in veterinary practice is the essential oil, which is an aromatic stimulant of considerable power.

SATURNINE LOTION, is made by dissolving two ounces of superacetate (sugar) of lead in one pint of vinegar, and three or four pints of water. This is considered an useful application to recent strains, bruises, &c.

SATURNINE OINTMENT, is made by incorporating Gaulard's extract of lead, or sugar of lead (superacetate of lead), with hog's lard or wax ointment. (See Goulard Astringents and Ointments.)

SATURNINE POULTICE. (See Poultice, Astringent Ointments, Acetate of Lead, and Embrocations; also vol. i.)

SAVIN. Farriers often employ the leaves of this shrub in a green state as an anthelmintic; but I have never seen it do any good.

SCAMMONY. A gum resin, strongly purgative, but never necessary in veterinary practice when aloes can be procured.*

SCORDIUM; *Water Germander.* The

---

* I have lately tried scammony in various doses: it produced scarcely any effect until six drams were given at one dose, which was followed by moderate purging. This experiment was made only on one horse: should another trial be made of it, a smaller dose of two or three drams should be first given.

leaves of scordium were formerly employed as an astringent and corroborant; and there is still an electuary of scordium or diascordium kept by druggists for the accommodation of farriers, who use it occasionally as an astringent.

SEA-WATER. Some horses will drink a sufficient quantity of sea-water to excite purging. Should such horses be affected with swollen heels, inflamed eyes, or other inflammatory complaints, it may be useful.

SENNA. The leaves are an effectual purgative in the human body; but in the horse it is an inconvenient medicine, on account of the large quantity requisite to produce this effect. Some writers on farriery have recommended a strong infusion of senna, with Glauber's salt, as an expeditious laxative. I have given senna in considerable doses without the least effect. I tried also the following mixture, so strongly recommended by many writers on farriery, which did not affect the bowels in the slightest degree:—

Senna, three ounces, infused in a quart of boiling water, and kept in a warm situation about an hour; the infusion was then strained off, and the remainder pressed off by considerable pressure. In this infusion we dissolved four ounces of Glauber's salt, and gave the whole to a horse at one dose.

SIALOGOGUES. Medicines that cause an increased secretion of saliva;—the principal of which are the preparations of mercury.

Local means were formerly employed to effect this in horses; that is, by wrapping linen round the bit that had been soaked in vinegar, in which garlic, assafœtida, pellitory of Spain, &c. had been steeped; also by putting balls between the grinders, composed of similar ingredients, or others capable of stimulating the salivary glands, and bringing on a discharge of saliva: these were called masticatories, or chewing balls. A late writer (Mr. Wilkinson) has recommended chewing balls, composed of antimonial powder, gum, &c. in epidemic catarrh or distemper, when attended with sore throat and difficulty of swallowing.

SILVER. The only preparation this metal affords is the lunar caustic, or nitrate of silver; an application of great importance in surgery, whether human or veterinary. (See Caustics and Lunar Caustic.)

SIMAROUBA, *Bark*. This bark imparts a strong bitter, both to water and spirit. It has been employed as a tonic, joined with ginger or aromatics.

SINAPISMS. Stimulating poultices, or liniments, in which mustard is a principal ingredient. (See Embrocation and Mustard.)

SNAKE-ROOT. The idea that this root counteracts the bites of serpents is now disregarded; but it is considered an useful medicine in cases of weakness, and may probably be employed with advantage in veterinary practice.

The dose is from two to four drams or more, and is generally given with carbonate of ammonia, or salt of hartshorn, camphor, and bark: in some cases opium is added. (See Tonics and Antiseptics.)

SOAP. The various kinds of soap have all a strong diuretic quality; but the purer kinds only should be employed as internal remedies; and these are Castile, Spanish, and pure white soap. Soap is an useful ingredient in purgative as well as diuretic preparations.

The dose is from two or three drams to an ounce, but it is sometimes given in larger doses.

Soft soap is very useful in cleansing foul heels; and, when mixed with oil of turpentine and spirit of wine, forms a good embrocation for strains, bruises, and indurated tumours. (See Embrocations and Liniments.)

SOCOTRINE ALOES. (See Aloes.)

SODA, *Natron*, or the *Mineral Alkali*. This is procured chiefly from the ashes of marine plants. Its medical properties are nearly the same as potash, but the prepared natron or soda is sometimes preferred as an ingredient in purgative and tonic medicines.

The dose is from two to four drams.

SOLUBLE TARTAR, or *Tartrate of Potash*. A laxative saline preparation, sometimes given with infusion of senna. It is composed of cream of tartar and carbonate of potash.

SORREL. An acidulous plant, sometimes prescribed by the veterinary practitioners of France in dysentery and molten grease; but not used by English veterinarians.

SOUTHERNWOOD. A fragrant shrub, directed by the London College as an ingredient in fomentations.

SPANISH FLIES. (See Cantharides.)

SPEARMINT. (See Mint.)

SPERMACETI. An unctuous substance, procured from the head of a certain species of whale. In medical practice it is often employed as a demulcent to allay irritation, as in cough; but is rarely employed in veterinary practice; and appears to differ very little in its medical properties from hog's-lard or suet. It has been lately discovered that the muscular parts of all animals may be converted into a substance resembling spermaceti, by maceration in water.

SPIKE; a species of *Lavender*. An oil of spike is kept in the shops, and much used by farriers; it appears, however, to be nothing more than oil of turpentine coloured with alkanet root.

SPIRITS. (See Rectified Spirit.)

By the term Spirit is commonly understood alkohol, either pure or diluted, and mixed with various substances. Spirit may be obtained from fermented liquids in a diluted state; when concentrated and purified, it is termed rectified spirit, or alkohol. An equal quantity of water being mixed with alkohol, forms proof spirit. There are various kinds of spirits used in medicine; such as spirit of nutmeg, spirit of juniper, &c. which are made by distilling the medical substance with dilute spirit.

SPONGE. Burnt sponge is sometimes used by medical practitioners in scrophulous complaints, but it is never employed in veterinary practice.

SQUILL, or *Sea Onion*. A large bulbous root resembling the onion, and a medicine of considerable value. The best preparation of squill for veterinary purposes is the powder of the dried root; which, in the dose of one dram or more, is an excellent expectorant, and efficacious in chronic cough: in larger doses it generally acts as a diuretic, but is not a desirable medicine for that purpose, there being many diuretics more certain in their effect. *Gum* *ammoniacum* is an eligible addition to squill; and I have sometimes seen camphor and opium joined to it with good effect. One dram of the dried squill is equal to about five drams in its fresh state. There are three other preparations of squill made, viz. the spirituous and acetous tincture, and the oxymel; but these are not so well calculated for veterinary purposes. (See Expectorants.)

STARCH. Starch glysters with opium are sometimes employed in obstinate diarrhœas or irritation of the rectum. In no other way is it useful in veterinary practice, while the cheaper mucilages, such as linseed, marshmallow, &c. can be procured; but when these are wanting, it is capable of making a good mucilaginous drink. (See Emollients and Demulcents.)

The preparation named *Arrow Root* is a pure starch, and when made into gruel is the best and safest preparation that can be employed in diarrhœa, or to restrain the effect of purging medicine when it has been given too largely.—Mixed with a watery solution of opium, it forms a good anodyne glyster. (See Glysters; also vol. i. Diarrhœa and Physic.)

STAVESACRE. The seeds of stavesacre are recommended as a topical application in cutaneous complaints, and for destroying those animalcules which are sometimes generated upon the horse's skin. They are used either in the form of a decoction, or finely powdered and mixed with train-oil, turpentine, &c.

Two drams of stavesacre were given to a glandered horse; he died during the night following, in great pain.

STERNUTATORY. (See *Errhines.*)

STEEL. The medical properties of steel are not supposed to differ from those of iron. (See Iron.)

STIMULANTS. A term of very extensive signification, and may with propriety be applied to the greater part of the articles of the Materia Medica. According to the celebrated Dr. John Brown, every medicine was considered as a *stimulant:* but it is probable that some, particularly the narcotics, have an opposite effect, particularly the distilled laurel water. The term *stimulant* is generally applied to those substances which perceptibly increase the motion of the heart and arteries. And under this head a great variety of remedies are included, both *internal* and *external;* among the former are cordials, cathartics, diuretics, &c.; the latter consist of embrocations, ointments, liniments, &c.

If the reader is desirous to obtain information on this head, he may consult Cullen's Materia Medica, Murray's Elements of Materia Medica, Brown's Elements of Medicine, and Darwin's Zoonomia.

STOMACHICS. Medicines that strengthen the stomach and excite appetite.

The term is nearly synonymous with cordials in veterinary medicine; though from *stomachics* we generally expect a more permanent effect than from those preparations denominated *cordial*, as they approach more to the nature of *tonics*. A few receipts will be given under this head, which are intended for horses that feed badly without any apparent cause, and such as are subject to flatulent colic and indigestion. Horses of this description are generally lean and in bad condition.

Stomachic Ball.

No. 1.	Powdered gentian	½ oz.
	Powdered ginger	1½ dr.
	Prepared natron or soda	1 dr.

Treacle, enough to form the ball for one dose.

No. 2.	Cascarilla, powdered	2 dr.
	Myrrh	1½ dr.
	Castile soap	1 dr.

Syrup, enough to form the ball for one dose.

No. 3.	Powdered quassia	2 dr.
	Aromatic powder	1½ dr.
	Soda	1 dr.

Treacle, enough to form the ball for one dose.

No. 4. Powdered colombo root ....½ oz.
Powdered cassia ....1 dr.
Powdered rhubarb from 2 dr. to ½ oz.
Syrup, enough to form the ball for one dose.

Before stomachics are given, a cathartic ball is generally required; for unless that state of the stomach or digestive organs be improved for which the above medicines are prescribed, no benefit can be expected from stomachics, cathartics, or any other medicine. Improper management with regard to food and water is most commonly the cause of this disordered state of the digestive organs; too often assisted by immoderate work and general ill treatment. The error in feeding often consists in giving hay of a bad quality, which contains but little nutriment, and is difficult of digestion. This is a circumstance that particularly demands the attention of postmasters and other large proprietors of horses, as bad hay, especially when eaten largely, often induces a morbid or voracious appetite, both for food and for water: hence arise worms, cough, roaring broken wind, general weakness, and loss of condition sometimes, and not unfrequently terminating in mesenteric consumption or marasmus. Much injury is often done by too liberal an allowance of good wholesome food, especially hay and water. (See Water and Preface; also vol. i.)

Such observations as I have now made will be found in some other parts of the book, and the repetition, it is hoped, will not be deemed improper, when it is considered that many important diseases depend upon bad management with regard to feeding; and that by a judicious alteration in the treatment of horses in that respect, stomachics, cordials, and tonics, may be rendered almost, if not quite, unnecessary.

STOPPING, for the Feet. A mixture of clay and cow-dung, or either of these separately, is commonly used for this purpose; and, by keeping the bottoms or soles of the feet moist and cool, often do good. In soles that are too thin and soft, or for the frogs when in that state, the following composition is more proper:

Tallow	1 lb.
Common turpentine and tar, of each	$\frac{1}{2}$ lb.

To be mixed by melting together.

Mr. Goodwin has contrived a kind of boot for keeping the feet cool and moist, as well as for applying the above composition. (See an Account of the various Methods of shoeing Horses, employed by different Nations, by Joseph Goodwin.)

STORAX. The common and the strained storax are the only kinds kept in the shops. The former is in the form of saw-dust, intermixed with resinous matter of an agreeable odour: the latter is extracted from this dust, and is far more pure; indeed, it is the only kind that can be employed for medical purposes. In its medical properties it resembles balsam of Tolu. (See Balsam of Tolu.)

STRAMONIUM. (See *Thornapple.*)

STYPTICS are medicines which constringe the blood-vessels when wounded, so as to stop an effusion of blood. Many preparations have been recommended for this purpose: but when the size of the wounded vessel is at all considerable, an adequate degree of pressure by means of bolsters and bandages is alone to be depended upon; and when that cannot be done, the vessel must be tied up above the wound and below, by which the bleeding will be effectually suppressed. No danger is to be apprehended from slight bleedings in the horse, as they always cease spontaneously.

The styptics commonly employed are oil of turpentine, diluted vitriolic acid, muriate of iron, absorbent earths, and flour.

SUBLIMATE, CORROSIVE, or *Oxymuriate of Quicksilver*. This is the strongest of the mercurial preparations; and whether employed externally or internally, requires being used with prudence and caution. It has been given with success in farcy and obstinate cutaneous complaints, beginning with a dose of eight or ten grains, and increasing it gradually to fifteen or twenty. It has been joined in such cases with an equal quantity of arsenic, and sometimes with white or blue vitriol. Some years ago, when making experiments on glandered horses, sublimate was many times given to the extent of two drams twice a day; and in this immense dose acted only, in some instances, as a diuretic. In others it brought on a dangerous degree of debility and loss of appetite, from which they were with difficulty recovered. In some it caused a violent salivation; and in a few it proved poisonous, producing a fatal inflammation of the stomach and bowels. In one horse only the symptoms of glanders appeared to be removed by giving it in large doses for many days; but the horse was excessively distressed by it, and incapable of feeding for two or three days. This horse was shot shortly after, so that the permanency of the cure was by no means ascertained; and subsequent experiments have appeared to prove that neither this nor any other preparation of mercury is capable of eradicating the glanders from the constitution. In farcy it has certainly been employed with success, but its effect is not uniform; in many instances it has proved ineffectual, for although with the assistance of local remedies it has appeared to remove the farcy completely;

yet the glanders has often succeeded it, after an interval of a few weeks, or even months. (See vol. iii. article Glanders.)

In obstinate cases of mange, sublimate may be advantageously joined with tartarized antimony. Ten grains of the former to two drams of the latter made into a ball with linseed meal and syrup. In farcy ten grains may be given with the same quantity of arsenic, or from half a dram to one dram of blue vitriol (sulphate of copper). White vitriol (sulphate of zinc) may be given with it more largely; that is, from one to two or three drams. Whenever these medicines appear to diminish the appetite, or cause uneasiness, they should be discontinued. The addition of opium is necessary, should the bowels be opened or the kidneys too much affected. In one glandered horse that was shot after he had been taking sublimate for two or three weeks, the blood appeared to have become very thin, incapable of coagulating, and in colour resembling claret. Sublimate, as well as calomel, when continued for some time, acts powerfully upon the kidneys; and in several horses that had been taking it largely, those organs were found enlarged, and sometimes otherwise diseased. The debilitating effect of those mercurial preparations is likewise very remarkable; and unless assisted by the greatest care and attention on the part of the groom, a nutritious strengthening diet, warm clothing, and proper exercise, that is, only voluntary exercise, in a large stall or box, or paddock, in warm weather, they will often be found to do more harm than good.*

Sublimate is useful as an external application, and may be dissolved in rectified spirit; proof spirit or water; but it dissolves more readily if first rubbed in a mortar with twice its weight, or even less, of spirit of salt or muriatic acid. With infusion or tincture of cantharides it forms a good liquid blister; it is a good application to foul ulcers or farcy sores, and canker of the foot. On such occasions it is applied in solution of various degrees of strength, according to the state of the diseased parts. The following is a convenient method of using sublimate as an external application:

Sublimate	2 dr.
Muriatic acid	4 dr.

Mix by rubbing them together in a mortar.

---

* I am inclined to believe that sublimate may be given with advantage in much smaller doses than I have prescribed, and that its debiliating property will be thereby in some degree, if not wholly, obviated. Opium and mucilaginous drinks, made with gum, arrow-root, or even fine wheat flour, will be found, I think, a further and necessary safeguard. I think it probable that the milder preparations of quicksilver, even the blue pill, may be advantageously substituted for sublimate. This, however, I have not yet ascertained; it certainly deserves a trial. (See Quicksilver.)

A few drops, or a small proportion of this solution may be added to water, rectified spirit, proof spirit, tincture of myrrh, solution of blue or white vitriol, or any other liquid so as to form lotions of various degrees of strength for ulcers, &c. I have known the most obstinate cases of virulent grease effectually cured by such applications, after emollient applications had been fairly tried, without effect. They are capable also of curing the mange.

SUDORIFICS. Medicines that cause sensible perspiration or sweating. In the horse there is no medicine that will with certainty produce this effect, and it is only by exercise or warm clothing that it can be produced. In locked-jaw a horse has been kept in a state of perspiration for a considerable time by being covered with sheep skins. (See vol. i. 12th Edition, article Locked-jaw, Appendix.) Vinegar and acetate of ammonia will sometimes cause perspiration; and opium, with emetic tartar, camphor, and cordials, are said to have a sudorific effect; also ipecacuana, with opium, camphor, and salt of hartshorn. There are but few diseases in the horse, however, where such an effect is required; and medicines of the sudorific kind can seldom be employed with safety unless it is after the animal has been freely bled, and taken opening medicine. Their diseases are most commonly of an inflammatory nature, requiring bleeding, with opening, cooling, or diuretic medicines.

SUET, or *Tallow*. This is used in the composition of ointments and plasters. Suet boiled in milk has been recommended in the scouring rot of horned cattle.

SUGAR OF LEAD. Acetate, or superacetate of lead. (See Lead.)

SULPHATES. Neutral salts, composed of sulphuric acid and alkalies, earths, or metals.

SULPHUR. Brimstone. (See Flowers of Sulphur.)

SULPHURETS. Combinations of sulphur with alkalies, earths or metals.

SULPHURIC ACID. Vitriolic acid, or oil of vitriol. (See Acids.)

SYRUP. For all veterinary purposes treacle is a good and a cheap substitute for syrup.

TANSY. This plant grows abundantly about the borders of fields; it has a strong bitter taste, and rather a pleasant odour. It may be employed in the form of a decoction as a vehicle for tonic or stomachic medicines. It has been said to possess an anthelmintic quality, but I believe there is no foundation for this opinion. It is used also in fomentations.

TAR. This is a good remedy for thrushes, and other diseases of the *frog*. It appears to promote the growth of horn, by gently stimulating the secretory vessels of that part.

The rotten parts of the frog having been carefully removed with a knife, and the rest well cleaned, the *tar* is to be melted and poured into the cleft or cavity: a pledget of tow is then to be laid on the part and confined by some proper contrivance. In bad cases, a small proportion of sulphuric acid should be carefully mixed with the *tar*; and when a *thrush* has degenerated into the disease termed *canker*, a larger proportion of the acid should be employed. (See Liniments.)

Tar mixed with oil of turpentine, and cantharides forms a strong blister. Farriers sometimes employ *tar* as a remedy for cough; but it more frequently aggravates than relieves the complaint. (See also Barbadoes Tar.)

Tar, when mixed with verdigris or finely powdered blue, or white vitriol, forms a good liniment or ointment for canker or thrushes. It may be occasionally employed also with alum. Tar is an excellent stopping for flat thin soles, either alone or mixed with hog's lard or tallow: in the latter form it makes a good hoof ointment, and when rubbed about the coronet and hoof, is said to render the hoof tough. (See vols. i. and iii.)

TARTAR. An acid substance, found about the sides and bottoms of casks in which wine is fermented: when purified, it is termed crystals, or cream of tartar. Farriers generally employ it in their purging medicines, upon the authority of some old writers, who supposed it to have the property of correcting aloes; but in the horse it is a very inert medicine, and, in my opinion, of very little use.

TARTAR EMETIC. (See Emetic Tartar.)

TARTARIZED ANTIMONY. (See Emetic Tartar and Antimony.)

TARTAR, SOLUBLE, or *Tartrate of Potash*. A neutral salt, not used in veterinary medicine.

TARTAR, VITRIOLATED. (See Sulphate of Potash.)

THORN APPLE. *Datura Stramonium.* A powerful narcotic that has not, as far as I know, been tried as a horse medicine.

TIN. This metal is a good anthelmintic in dogs; and though not employed in veterinary practice, appears to be worth a trial. I have known great numbers of worms discharged from dogs, by giving filings or scrapings of pewter, which is composed principally of tin and lead. The dose about a dram. (See Anthelmintics.)

TINCTURES. Medical preparations made by infusing or digesting vegetables, &c. either in rectified or proof spirit. Examples: compound tincture of benzoin, commonly named Friar's, or traumatic balsam, is made by digesting gum benzoin, aloes, &c. in rectified spirit. Tincture of opium is made by digesting opium in proof spirit. There are also tinctures made with vinegar, such as squill and meadow saffron. Compound spirit of ammonia likewise is sometimes employed, as in the volatile tincture of guaiacum, and fœtid spirit of ammonia.

TOBACCO. This is sometimes given to horses by grooms, for the purpose of keeping their legs fine; it generally acts as a diuretic.*

---

* A short time since an infusion of about two ounces of tobacco in a quart of beer was given to a horse merely for the purpose of keeping his heels fine. He died immediately after taking it.

I was not present when this circumstance occurred, but am satisfied of the truth of it. I am inclined to believe, however, that there must have been something in this case that was not discovered; the stomach may have been previously diseased, or the horse may have been suffocated by the drench getting into the windpipe: I have within a short period given an infusion of tobacco, as well as the tobacco that the infusion had been made from, in the dose of two, three, and four ounces. The only perceptible effect was a shivering, and an appearance which indicated a considerable affection of the stomach, not altogether like nausea, yet ap-

TONICS. Tonics, according to Murray, are those substances whose primary operation is to give strength to the system. Their operation is not mechanical, as was once conceived; they act not in the simple solids, increasing their tension or tone, but on the living fibre, and are merely powerful stimulants permanent in their operation. By producing a gradual excitement, they give vigour to the actions of the system, and as that excitement is gradually produced, it is in like manner gradually diminished, and the habitual stimuli continuing to operate diminished action does not succeed. Where tonics however are given in excess, are used unnecessarily, or for too long a time, they weaken the powers of life. Tonics act primarily on the stomach, the action they excite in that organ being communicated generally by the medium of the nerves to the rest of the system; some of them however are received into the mass of blood. The immediate

---

proaching towards it; but the effect was transient. Accordcording to Boardman, an infusion of three pounds of tobacco has been given without effect. In Bourgelat's Matière Médicale Raisonée, it is said to make an efficacious clyster in obstinate costiveness; and is prescribed also in chewing-balls or masticatories (see Veterinary Dictionary). Muriate of ammonia, dissolved in a decoction of tobacco, is said to be a good remedy for the mange; rubbing the affected parts with the fresh leaves of tobacco is said to have the same effect. It is employed also for the mange in sheep and dogs, and in the latter serves to kill fleas and ticks.

effects of a tonic given in a proper dose, are to increase the force of the circulation, to augment the animal heat, promote the various secretions or moderate them when morbidly increased, quicken digestion, and render muscular action more easy and vigorous. By some of them these effects are very slowly induced. The affections of the system in which tonics are employed must be obviously those of debility. But previous to their being employed it is necessary to inquire on what that debility depends; if it be simply on want of tone, as it is termed, in the stomach, and consequently in the system in general, the use of tonics is clearly indicated; but if it arise from unwholesome food, or an insufficient quantity of food, hard labour and exposure to the inclemencies of the weather, or the exhalations of a damp close filthy stable, tonics will avail nothing until the situation, treatment, and food of the poor animal are materially improved; that such cruel and abominable treatment is frequently if not always the cause of debility in horses is well known, therefore no further comment upon the folly, impolicy, and cruelty of such treatment is necessary in this place. Before tonics are given, it is generally necessary to give some warm purgative medicine, and the addition of half a dram or a dram of calomel will often render it more efficacious. While the horse is taking tonics great attention should be paid to his diet, and it would not be going too far I believe, were I to assert, that by judicious management with regard to food, grooming and exercise, and the occasional use of mild physic, horses would seldom require tonic medicine. In England horses are certainly worked beyond their power; and though rendered capable by artificial means, such as training, of wonderful exertions for a short period, yet were it generally known how materially the duration of his life and services are abridged by such practices, a feeling of interest one would think, were there no better motive, would prevent their continuance, and meliorate in some degree the condition of this useful but ill treated animal. Scarcely a week or a day passes without hearing of some astonishing exertion in galloping or trotting matches upon hard roads, and the barbarous attempt to ride a noble animal from Ipswich to London, and back again, in twelve hours, is by no means a solitary example of such cruelty.

Tonics may be divided into minerals and vegetables; the former are generally considered the most powerful, and I believe are at this time generally preferred, not only on account of their supposed superior efficacy, but likewise, probably, from their being less expensive, and the dose less bulky and inconvenient.

In the former editions of this work, I have generally given them a preference, but subsequent experience and reflection have led me to employ them with more caution and with less confidence in their reputed innoxious qualities, for notwithstanding the immense doses of arsenic, and blue vitriol, (sulphate of copper,) that have been given without producing any immediate ill effect; it is highly probable that the stomach suffers materially, especially when the use of such medicines is persisted in. I have examined a horse's stomach that had been taking these mineral tonics, and though they had not diminished the animal's appetite or altered his appearance, on the contrary he was in high condition and did his work well, yet being glandered, was destroyed. The stomach however had been seriously injured, and would, no doubt, had the animal lived much longer, have produced some serious disorder.

This question naturally arises, in what respects are those mineral tonics, so well known as powerful poisons in the human body, preferable to those obtained from the vegetable kingdom? In the first place they are considered as the only medicine capable of curing the glanders, and farcy, and are therefore prescribed for those diseases. I have never seen a single case of glanders permanently cured, either by arsenic, blue vitriol, or mercury, notwithstanding the numerous trials I have witnessed during a period of more than twenty years. Farcy has certainly disappeared in many instances while taking those medicines, but at the same time some local remedies were employed, that is, the farcy sores were dressed with some caustic escharotic or detergent composition; and it is well known that farcy, that is, the sores, buds, and all the *external* symptoms or appearances, may be generally removed by external applications alone. Therefore it is uncertain what share the tonic has had, whether it be arsenic or blue vitriol, in the cure of the disease. (See Vol. III. Glanders and Farcy.) Another circumstance to be considered is, that farcy though apparently cured by means of those strong medicines is often not really or permanently eradicated, but frequently is succeeded by glanders, and though the interval between the disappearance of farcy and appearance of glanders is sometimes considerable, there are circumstances which render it extremely probable that they are connected, and depend on the operation of the same cause. But whatever share arsenic, blue vitriol, or sublimate may have had in the cures that have been effected, whether permanent or only temporary, small doses have generally been found sufficient; that is of arsenic from ten to fifteen or twenty grains, sublimate from ten to fifteen grains, blue vitriol from half dram to one dram, or at most two drams, white vitriol from one to three drams. The experiments therefore in which large doses have been given, such as two drams of arsenic or sublimate once or twice a day, and continued for some time, should never be repeated, as they are really more likely to defeat the purpose for which they are given than to promote it, and there can be no doubt that notwithstanding the little immediate effect they appear to have on the stomach, that this important organ is often most seriously and permanently injured by it. That they are incapable of curing the glanders when so employed has been fully proved, and if they can cure the farcy, it is more likely to be accomplished by small or moderate doses judiciously combined, and assisted by a suitable diet and good grooming, than by the large doses which have been given in those fruitless and painful experiments.*

---

* In a note to the article *Arsenic*, I have suggested the probability *of one grain only* of that poisonous mineral being found a sufficient dose for a horse; if very finely powdered, by rubbing it in a mortar with about ten times its weight of supertartrate of potash, (cream of tartar) and given twice or three times a day in the horses food. Thus employed it may prevent worms which are certainly in some, if not in all cases,

The following is the list of tonics given by Murray, as employed in human medicine:

TONICS FROM THE MINERAL KINGDOM.

Preparations of *quicksilver* or *mercury*; of *iron*; of *zinc*; of *copper*; of *arsenic*; of barytes; of lime; nitrous acid; *oxymuriate of potash.*

except botts, a deposit from the blood in the form of eggs, as minute probably as the particles of a fluid. Worms resembling ascarides are often found in the arteries of the horse, and is it not probable that those found in the bowels are derived from the same source? Corrosive sublimate is equally, if not more injurious to the horse than arsenic, and may be tried in a similar way; not, however, mixed with the horse's food, on account of its unpleasant taste, but in smaller doses than are now given. Under the head *quicksilver* I have advised a careful trial being made of the most simple preparations of that metal, such as blue pill, or quicksilver with chalk: these, or similar preparations, may be tried both in farcy and glanders. (See Quicksilver; also vol. 3.) Murray had classed the preparations of mercury as *tonics*, but in the horse their most conspicuous property is that of weakening the stomach as well as the whole muscular system. This is more especially the case with sublimate, when given even in what is now generally considered a moderate dose, that is, from ten to twenty grains; the same effect is produced by calomel when given daily for some time. The kidneys also are materially injured by these preparations, and sometimes have been found partially or completely disorganized. If, therefore, the diseases for which sublimate is employed can be cured by a more innocent preparation of quicksilver, that preparation ought surely to be preferred. Sublimate should never be given unless its pernicious effects are guarded against by opium. Mucilaginous drinks, such as arrow-root, or wheat flour gruel, should also be given.

From the vegetable Kingdom.

Peruvian bark, pale, yellow, and red; Angustura bark; snake-root; contrayerva; canella alba; cascarilla; colomba; quassia; Semirauba gentian; chamomile; wormwood; centaury; Seville orange peel; horehound; buckbean; cinnamon; cassia; ginger; nutmegs; cloves; pepper; cayenne, long and black; cubebs; allspice; cardamom seeds; caraway seeds; coriander seeds; anise-seeds; fennel seeds; dill seeds; cumin seeds; angelica; mint; peppermint; pennyroyal, and hyssop.

Among the mineral tonics, those printed in italics only, are used in the veterinary medicine, and may be employed either separately, or in combination.

The following are examples:

No. 1.	Powdered arsenic	from 5 to 10 gr.
	Powdered anise-seed	½ oz.
	Opium	½ dr.
	Treacle enough to form the ball.	
No. 2.	Arsenic	from 5 to 10 gr.
	Sulphate of copper	½ dr.
	Opium	½ dr.
	Powdered caraways	½ oz.
	Treacle enough to form the ball.	
No. 3.	Arsenic	from 5 to 10 gr.
	Opium	½ dr.

	Sulphate of zinc	2 dr.
	Caraway seeds	½ oz.

Treacle enough for the ball.

No. 4.	Arsenic	from 5 to 10 gr.
	Opium	½ dr.
	Sulphate of iron	2 dr.
	Caraways	½ oz.

Treacle enough to form the ball.

In farcy, sublimate (oxymuriate of mercury) may be added to either of the balls; but this medicine cannot with propriety be classed with tonics in veterinary medicine, for its effect, when given for several days, is that of producing debility, and an increased flow of urine. The dose is the same as arsenic. The vegetable tonics I consider as an important class of medicines, especially those printed in italics; the others are rather stimulents, cordials, carminatives, and stomachics, than tonics. A description of each, as well as of the mineral tonics, will be found under its respective name. This article may appear of an unnecessary length, but I wish to caution the reader against the immoderate and inconsiderate use of the mineral tonics, particularly arsenic and blue vitriol, or sulphate of copper, as well as sublimate and other preparations of mercury, especially against useless experiments with those powerful preparations. I am desirous also of reminding him, that when horses are treated with humanity, and paid proper attention to with respect to feeding and exercise, they will seldom have occasion for tonics or any other medicine, nor will they be so subject as they now are, to the numerous lamenesses by which so many are rendered unserviceable, even before they have arrived at maturity. This article will now be concluded with some formula for vegetable tonics.

No. 1.	Peruvian bark	1 oz.
	Opium	½ dr.
	Ginger	1½ dr.
	Oil of caraways	20 drops.

Treacle enough for the ball—one dose.

No. 2.	Colombo root	from 3 to 4 dr.
	Aramatic powder	1½ dr.
	Opium	½ dr.
	Powder caraways	4 dr.

Treacle enough for the ball.

No. 3.	Cascarilla	2 dr.
	Gentian root	2 dr.
	Opium	½ dr.
	Oil of caraways	20 drops

Treacle enough to form the ball.

N. 4.	Quassia	2 dr.
	Canella alba	2 dr.
	Opium	½ dr.
	Ginger	1 dr.

Treacle enough to form the ball.

No. 5.	Gentian root	3 dr.
	Opium	½ dr
	Cascarilla	1 dr.
	Myrrh	1 dr.
	Carbonate of soda	1 dr.

Treacle enough for the ball.

No. 6.	Colombo	3 to 4 dr.
	Opium	½ dr.
	Cassia	1 dr.
	Powdered allspice	2 dr.

Treacle enough to form the ball.

These formulæ may be considerably varied, or given as drenches in warm ale, or in an infusion of some aromatic or bitter herb, and if preceded by a mild purgative, and assisted by a light but nutritious diet will often do much good, more perhaps than the mineral tonics. (See vol. i. articles Stable, Grooming, Feeding, &c.; also Cathartics, Laxatives, Stomachics, and Restoratives, in this volume.)

TRAUMATIC BALSAM, *Compound Tincture of Benzoin, Friars Balsam, &c.*

Take of Benzoin	3 oz.
Strained storax	2 oz.
Balsam of tolu	1 oz.
Aloes	½ oz.
Rectified spirit	1 qt.

Digest for fourteen days, and filtre or strain.

TORMENTIL. The root is a powerful astringent, and is sometimes employed in the diarrhœas of horses and horned cattle, with good effect.

One ounce, or one ounce and a half, being boiled in three pints of water to one pint and a half, with a little cassia and caraway seeds, makes one dose, which may be repeated if necessary.

TRAGACANTH, or *Gum Dragon.* This gum makes a strong mucilage, and may be employed in making emollient drinks.

TURBITH MINERAL, *Yellow Mercurial Emetic*, or *Vitriolated Quicksilver.* This mercurial preparation is seldom used in veterinary practice, being apt to irritate the stomach and bowels, and bring on violent purging; but it has been recommended as a remedy for farcy.

The does is from half a dram to a dram.

It is a good emetic for dogs, when they have swallowed any poisonous substance, or at the commencement of *the distemper.*

TURMERICK. This root, though formerly employed, and still highly esteemed, by farriers, as a remedy for the jaundice, or yellows, does not appear to differ from other aromatic stimulants, which quality it possesses in a moderate degree.

The dose is about one ounce.

TURNIPS. Boiled *turnips* make an excellent poultice for the heels when affected with grease.

TURPENTINE. This term is applied to the resinous juices of certain trees. There are four kinds, viz. Chio, Strasburgh, Venice, and common *turpentine*; the two last only are employed in veterinary medicine. They are effectual diuretics, and possess a considerable carminative power. Common *turpentine* is a principal ingredient in digestive and detergent ointments. By distillation we obtain from it the oil, or as it is sometimes termed, the spirit of turpentine, a medicine of great utility. In doses from two to three or four ounces, it frequently cures the flatulent colic, or gripes; and, when combined with camphor and other stimulants, makes a good embrocation for indurated swellings, strains, and bruises. When properly mixed with mustard, it forms an embrocation that has been found serviceable in counteracting *internal* inflammation. I have seen it applied to obstinate ulcers with good effect. It is an useful ingredient in blistering-ointment, and liniments.*

---

* In speaking of the turpentines, Dr. Paris says, they all possess the same chemical as well as medicinal properties, viz. Canada turpentine, or Canada balsam, as it is sometimes improperly called, is obtained from the Pinus Balsamea. 2dly, Chian or Cyprus turpentine, from the Pistachia Te-

Venice Turpentine is generally made by mixing the oil with the common *turpentine*, which is easily done when the latter is melted.

rebinthinus. 3dly, Common, or horse turpentine, from the Pinus Sylvestris, or Scotch fir. 4thly, Venice turpentine from the Pinus Larix: from the twigs of this species of fir, the essence of spruce is made. True Riga balsam is made from the shoots of the Pinus Cembra, previously bruised and macerated for a month in water. The same fir affords also Briançon turpentine. In the appendix to my Veterinary Dictionary there is a communication respecting the use of oil of turpentine as an anthelmintic. It is certainly the most efficacious that can be employed, if properly managed, that is, in expelling them from the bowels. (See Anthelmintics.) In large doses it generally acts as a purgative, especially when the bowels are previously relaxed by bran mashes, or a small dose of aloes. In small doses it is a powerful diuretic. Mr. Coleman considered it almost as a specific in flatulent colic in a dose of four ounces, mixed with gruel. It has been given to the extent of eight ounces at a dose, without injury; but in one case a dose of four ounces produced a fatal inflammation of the stomach and bowels: in this case, however, a dose of physic had been given the day before, and the horse had a considerable purging at the time the turpentine was exhibited. In the human body two drams of oil of terpentine may so excite the kidneys as to produce bloody urine, whereas six or eight drams will stimulate the bowels, and purge without affecting the urinary organs, or only in a moderate degree. It is said to be almost a specific remedy for tape worm, in the human body, always discharging it dead; and in obstinate constipation, depending on affections of the brain, Dr. Paris says he has several times witnessed its beneficial effects.

Dr. Latham considers it a valuable medicine in epilepsy. As a veterinary medicine it is certainly of great value; and though in a few cases, when given internally, it has pro-

Venice Turpentine is sometimes employed as an ingredient in cough medicines. The dose is about half an ounce. But if given as a remedy for flatulent colic, or as a diuretic, a larger quantity is necessary. It makes a good detergent ointment, if mixed with about a fourth or a third part of red precipitate, finely powdered.

TUTTY. A gray earthy substance, not used in veterinary practice. (An Oxide of Zinc.)

duced violent effects, merely, I believe, from bad management, yet when judiciously administered, it may be employed in a dose of four ounces, with advantage and safety. (See vol. i. articles Worms, and Veterinary Dictionary, Appendix.)

I have long discontinued the use of oil of turpentine in my practice as a remedy for flatulent cholic, gripes, or fret; finding the preparations of *opium* far more effectual. (See Opium.) With respect to worms it will be seen, in some parts of this edition of the Materia Medica, as well as in the 12th edition of the 1st volume, or compendium, that I consider it of more importance to prevent worms than to expel them from the bowels. When the stomach has been weakened or disordered, worms will be generated in the bowels, and even in the arteries, on whatever food the animal is kept. To expel them, therefore, from the bowels is doing but little for the cure of the disorder, and those medicines which do expel them, such as oil of turpentine, and large doses of calomel, may increase that morbid state of the stomach on which their existence depends. (See vol. I. 12th Edition, article Worms; also Preface to this volume, and articles Tonics, Arsenic, and Anthelmintics.)

VALERIAN. The dried root is employed by medical practitioners, in spasmodic and nervous complaints; but there is no disease in the horse in which it is likely to be serviceable.

VERDIGRIS. The rust of copper. It is made in wine countries, by burying thin copper-plates in the refuse parts of the grape, after the juice has been pressed out. It is employed externally as a mild caustic or detergent, and is frequently mixed with common turpentine, or ointments, for the same purpose. (See Detergents and Digestives.)

When *verdigris* is dissolved in distilled vinegar, and crystallized, it becomes considerably stronger, and will be found an excellent remedy for *quittors.* (See vol. i.) In this state it is called crystallized or distilled *verdigris.* Common *verdigris* has been recommended as a remedy for the farcy; but I have never seen it do any good in that complaint, though I have several times given it a trial.

It has been fairly tried in the glanders: half an ounce was given daily for a considerable time, but it had no effect on the disease, nor did it occasion any inconvenience to the animal. This is rather remarkable, *verdigris* being considered as a poison in the human body, and is the substance which causes the deleterious effects which copper vessels, when employed for culinary purposes, have sometimes occasioned.

VERMILION. This is prepared nearly in the same way as *cinnabar;* but as a little arsenic is sometimes employed to heighten its colour, it is never used for medical purposes.

VESICATORIES. A term synonymous with blisters.

VINEGAR. Though medical practitioners prefer *distilled vinegar*, yet, for veterinary purposes, the best *undistilled vinegar* is just as proper. It makes an useful embrocation, with about a tenth part of *sal ammoniac* or muriate of ammonia, for inflamed swellings; and when neutralized with prepared ammonia, or salt of hartshorn, forms a preparation sometimes employed in fevers, and termed Minderus's spirit.

Vinegar is sometimes used alone as an embrocation for strains, bruises, or inflamed swellings of any kind, and often with success: it may be made more effectual, however, by the addition of sal ammoniac and proof spirit, or by being mixed with a small quantity of sugar of lead and water, according to the circumstances of the case. A solution of honey in *vinegar* is termed an oxymel, and is sometimes used as a remedy for coughs: this is said to be nearly the same preparation as Godbold's vegetable syrup, which has been sometimes recommended by farriers to cure "*broken wind*," an incurable disease! (See Acetates and Embrocations.)

VIPER'S FAT is similar in its medical qualities to common fat; though formerly supposed to be a remedy for the bite of the viper, and other venomous reptiles.

VITRIOL, a term commonly applied to those salts of which vitriolic acid is a constituent part: the London College, however, gives names expressive of their composition; thus, *white vitriol*, which is composed of vitriolic acid and zinc, is named *vitriolated zinc*.

VITRIOLIC ACID. (See Acid Vitriolic), or as it is more commonly named *oil of vitriol*, is now in all modern dispensatories named SULPHURIC ACID, and its combinations are therefore named *Sulphates*. Examples: Instead of vitriolated copper, iron, potash, &c. we have sulphate of iron, sulphate of zinc, sulphate of potash, &c.

VITRIOLATED COPPER. (See Blue Vitriol.)

VITRIOLATED IRON, *Green Vitriol*, or *Copperas*. This resembles salt of steel in its medical qualities. (See Salt of Steel.)

VITRIOLATED KALI, or *Vitriolated Tartar*: not used in veterinary medicine.

VITRIOLATED NATRON, or *Soda.* (See Glauber's Salt.)

VITRIOLATED QUICKSILVER. (See Turbith Mineral.)

VITRIOLATED ZINC, *White Vitriol,* or *Copperas.* This has been recommended as a tonic remedy, in doses from half an ounce to six drams. But I have seen it given to the extent of twelve ounces at one dose, to a glandered horse, by way of experiment, without producing much inconvenience: the only effect produced was upon the urinary organs, occasioning a frequency and a little difficulty in *staling.* It is a good application to indolent ulcers, and in the latter stages of grease. (See Astringents, and Tonics.) A weak solution of white vitriol is often employed as an eye-water.

WATER. Much has been written respecting the different qualities of water, some having been considered as very injurious to horses, while others have been said to promote health and condition. Dr. Bracken thought hard or pump water liable to produce the gravel or stone; and other authors have had still more whimsical notions on this subject. It appears probable that transparent and sweet water, that is, such as is most grateful to man, is most wholesome for horses, whether it be taken from a well or from any other situation. The ill effects that have sometimes resulted from drinking certain kinds of water, may depend upon its being drank too largely, or at too cold a temperature, at a time when the *stomach* was not in a *condition* for receiving so much, or upon its being so ill-tasted that the horse does not take a sufficient quantity for the purposes of digestion; or, if he does, it may create that degree of nausea, which proves injurious to the stomach. In deep wells the water is generally about the same temperature, both in winter and summer, that is about 40° of Fahrenheit's thermometer. If a horse, therefore, in a hot summer day, after being heated by exercise, should drink freely of such comparatively cold water, it would probably do him a serious injury; for the water of ponds or running streams may at that time be fifteen degrees warmer. In winter, however, the water of deep wells is generally to be preferred, being considerably warmer than that of ponds or streams. As to the small quantity of sulphate of lime or selenite that hard water may contain, it is not probable that it contributes in any degree to the formation of stones either in the bowels or bladder. It is certain, however, that the *temperature* of water, the *quantity* taken at a time, the state of the body when taken, and especially the state of the stomach, are circumstances that ought to be carefully attended to. The practice of medicating water, that is, of mixing nitre, salts, &c. with it, may be proper when horses require only a moderate quantity of water; but when dilution is considered necessary, their water should be as free from taste or smell as possible.

Horses under the operation of cathartic medicine or physic, sometimes refuse warm water, often because it is too warm, or of an unpleasant or smokey smell or taste; in such cases it should be offered a little colder, and free from any offensive smell. Horses are often watered only twice a day, and then suffered to drink as much as they have an inclination for; this is particularly injurious to such as have voracious appetites, or worms, chronic cough, imperfect or broken wind. Such horses should have a small or moderate quantity three or four times a day, and their hay and corn should be moistened; this would diminish their appetite for water, which is generally inordinate. And if they are allowed to drink much, they are the more inclined to eat immoderately of hay; and if they are restrained in this they will often devour even their litter, however foul it may be, and therefore greatly aggravate their complaint.

WAX. Bees-*wax* is used only in the composition of ointments and plasters.

WINE. *Port wine* has been recommended in obstinate diarrhœas, accompanied with debility. A little cassia or ginger is generally added to it, and on some occasions *opium*. It is certainly a powerful cordial, and may be advantageously employed, when such remedies are required. The dose is about half a pint; but a horse accustomed to cordials will take more.

WINTER'S BARK. A pleasant stimulant; and though not commonly used in veterinary practice, may be given with good effect in cases of indigestion and weakness of stomach.

The dose from three drams to one ounce every morning.

WOLF'S BANE, or *Aconite*. A dangerous medicine in the horse, and never employed; its effect having been ascertained upon glandered horses. (See Remarks on Flower of Sulphur.)

YEW TREE. The leaves of this tree are poisonous to horses and cattle. I gave about five ounces to a donkey, which destroyed him in less than an hour. A farmer, near Exeter, lost several cows by eating the leaves from small trees that grew in the hedge of the field where they were kept. The following circumstance was related in an Exeter paper:—

"Lately a yew tree having been felled in a field at Warley, Somerset, belonging to farmer Hiscox, in the course of the ensuing night six out of seven cows that were in calf died, in consequence of eating its branches." (Woolmer's Paper, April 11, 1818.) It has been supposed that the leaves or branches of the yew tree destroy animals, from being indigestible; but from the appearance of the ass's stomach, that was destroyed by it, I am of opinion that the juice of the leaves possesses a poisonous quality.

ZINC. A metallic substance, or rather a semi-metal, the oxide of which is named *Flowers of Zinc* (which see). It affords other medicinal preparations, the most useful of which is sulphate of zinc, or white vitriol. This is employed in making astringent lotions and eyewaters, and is sometimes given internally as a tonic. (See Eye-water, Astringents, Tonics, and Flowers of Zinc.)

THE END.